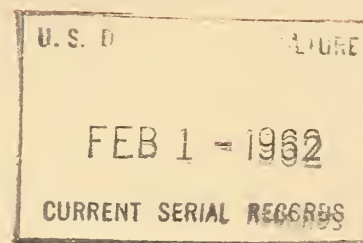


Historic, Archive Document

Do not assume content reflects current scientific knowledge, policies, or practices.

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D
WATER SUPPLY OUTLOOK
and
FEDERAL - STATE - PRIVATE COOPERATIVE SNOW SURVEYS
for
OREGON

UNITED STATES DEPARTMENT of AGRICULTURE...SOIL CONSERVATION SERVICE
and
OREGON AGRICULTURAL EXPERIMENT STATION
and
STATE ENGINEER of OREGON

Data included in this report were obtained by the agencies named above
in cooperation with other Federal, State and private organizations.

||||||| AS OF |||||
JAN. 1, 1962

UNITED STATES DEPARTMENT OF AGRICULTURE - SOIL CONSERVATION SERVICE

To Recipients of Cooperative Snow Survey and Water Supply Forecast Reports:

The climate of the cultivated and populated areas of the West is characterized by relatively dry summer months. Such precipitation as occurs falls mostly in the winter and early spring months when it is of little immediate benefit to growing crops. Fortunately, most of this precipitation falls as mountain snow which stays on the ground for months, melting later to sustain streamflow during the period of greatest demand during late spring and summer. Thus, nature provides in mountain snow an imposing water storage facility.

The amount of water stored in mountain snow varies from place to place as well as from year to year and accordingly, so does the runoff of the streams. The best seasonal management of variable western water supplies results from fore-knowledge of the runoff.

A snow survey consists of a series of about ten samples taken with specially designed snow sampling equipment along a permanently marked line, about 1000 feet in length, called a snow course. The use of snow sampling equipment provides snow depth and water equivalent values for each sampling point. The average of these values is reported as the snow survey measurement for a snow course.

Snow surveys are made monthly or semi-monthly beginning in January or February and continue through the snow season until April, May or June. Currently more than 1400 western snow courses are measured each year. These measurements furnish the key data for water supply forecasts.

By relating snow survey measurements taken over a period of years to spring-summer runoff during the same period, relationships have been developed which make it possible to forecast seasonal runoff several months in advance of occurrence. In order to make a forecast, once a forecast relationship has been developed, the maximum snow water content at previously selected key snow courses is usually entered in the forecast relationship. More accurate forecasts are often obtained when other factors such as soil moisture, base flow and spring precipitation are considered and included in the forecast relationships.

Listed below are the Federal-State-Private Cooperative Snow Survey and Water Supply Forecast reports available for the West which contain detailed information on snow survey measurements, streamflow forecasts, reservoir storage, soil moisture and other guide data to water management and conservation decisions.

PUBLISHED BY SOIL CONSERVATION SERVICE

<u>REPORTS</u>	<u>ISSUED</u>	<u>LOCATION</u>	<u>COOPERATING WITH</u>
RIVER BASINS			
COLORADO AND STATE OF UTAH	MONTHLY (JAN.-JUNE)	SALT LAKE CITY, UTAH	UTAH STATE ENGINEER AND OTHER AGENCIES
COLUMBIA	MONTHLY (JAN.-MAY)	BOISE, IDAHO	IDAHO STATE RECLAMATION ENGINEER
UPPER MISSOURI AND STATE OF MONTANA	MONTHLY (FEB.-JUNE)	BOZEMAN, MONTANA	MONT. AGR. EXP. STATION
WEST-WIDE	OCT. 1, APR. 1, MAY 1	PORTLAND, OREGON	ALL COOPERATORS
STATES			
ALASKA	MONTHLY (MAR.-MAY)	PALMER, ALASKA	ALASKA S.C.D.
ARIZONA	SEMI-MONTHLY (JAN. 15 - APR. 1)	PHOENIX, ARIZONA	SALT R. VALLEY WATER USERS ASSOC. ARIZ. AGR. EXP. STATION
COLORADO AND NEW MEXICO	MONTHLY (FEB.-MAY)	FORT COLLINS, COLORADO	COLO. AGR. EXP. STATION COLO. STATE ENGINEER N. MEX. STATE ENGINEER
IDAHO	MONTHLY (FEB.-MAY)	BOISE, IDAHO	IDAHO STATE RECLAMATION ENGINEER
NEVADA	MONTHLY (JAN.-MAY)	RENO, NEVADA	NEVADA DEPT. OF CONSERVATION AND NATURAL RESOURCES DIVISION OF WATER RESOURCES
OREGON	MONTHLY (JAN.-JUNE)	PORTLAND, OREGON	ORE. AGR. EXP. STATION OREGON STATE ENGINEER
WASHINGTON	MONTHLY (FEB.-JUNE)	SPOKANE, WASHINGTON	WN. STATE DEPT. OF CONSERVATION
WYOMING	MONTHLY (FEB.-JUNE)	CASPER, WYOMING	WYOMING STATE ENGINEER

Copies of these various reports may be secured from:

Head, Water Supply Forecasting Section
Soil Conservation Service
P.O. Box 4170, Portland 8, Oregon

PUBLISHED BY OTHER AGENCIES

<u>REPORTS</u>	<u>ISSUED</u>	<u>AGENCY</u>
BRITISH COLUMBIA	MONTHLY (FEB.-JUNE)	COMPTROLLER, WATER RIGHTS BR., DEPT. OF LANDS AND FORESTS, PARLIAMENT BLDG., VICTORIA, B.C., CANADA
CALIFORNIA	MONTHLY (FEB.-MAY)	CALIF. DEPT. OF WATER RESOURCES, SACRAMENTO, CALIF.

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WATER SUPPLY OUTLOOK
and
FEDERAL - STATE - PRIVATE COOPERATIVE SNOW SURVEYS
for
OREGON

ISSUED

JANUARY 8, 1962

Report prepared by

W. T. FROST, Snow Survey Supervisor

and

BOB L. WHALEY, Assistant Snow Survey Supervisor

SOIL CONSERVATION SERVICE
209 S.W. 5TH AVE., PORTLAND 4, OREGON

Issued by

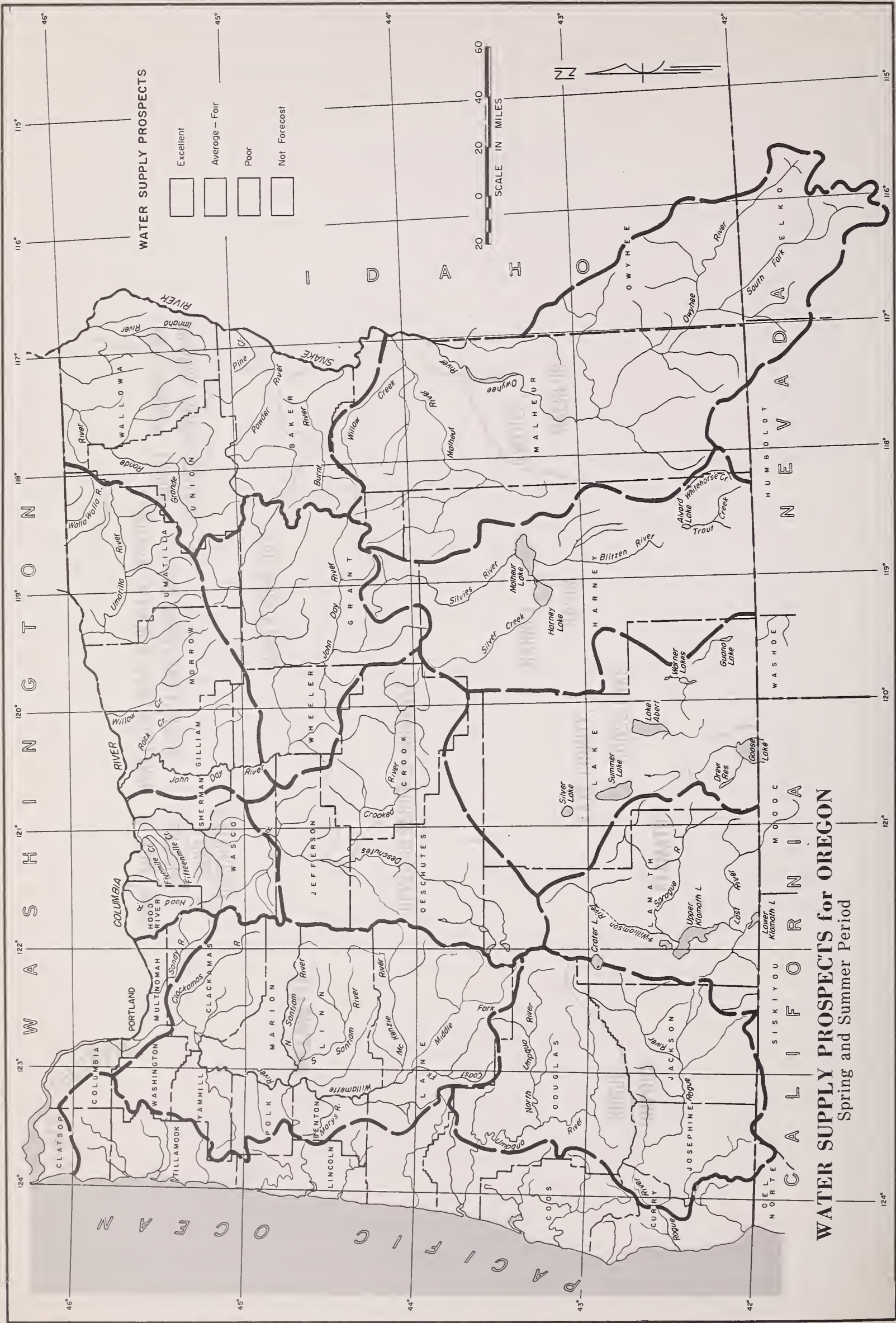
THOMAS P. HELSETH
STATE CONSERVATIONIST
SOIL CONSERVATION SERVICE

F. EARL PRICE
DIRECTOR
OREGON AGRICULTURAL
EXPERIMENT STATION

LEWIS A. STANLEY
STATE ENGINEER
STATE OF OREGON

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UPPER JOHN DAY.....	AREA 4
UPPER DESCHUTES, CROOKED.....	AREA 5
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MAP AND INDEX OF OREGON SNOW COURSES.....(MAP)	
LIST OF COOPERATORS.....	INSIDE BACK COVER



WATER SUPPLY PROSPECTS

- Excellent
- Average - Fair
- Poor
- Not Forecast

SCALE IN MILES

WATER SUPPLY PROSPECTS for OREGON
Spring and Summer Period

WATER SUPPLY OUTLOOK for OREGON

JANUARY 1, 1962

The early winter outlook for 1962 irrigation water supplies in Oregon ranges from a pessimistic situation in the southern tier of counties, Malheur, Harney, Lake, and eastern Klamath, to adequate water supplies in most of the rest of the state. Although the mountain snowpack is normal or better, the pessimism arises from lack of moisture in the soil-mantle and especially from extremely short storage water supplies for many southeastern areas.

SNOW COVER:

Water content of the mountain snowpack varies upward from 106 percent of average (1943-57) on the Owyhee to 131 percent average on the John Day but is virtually double the snowpack of a year ago except on the Owyhee and Williamson Rivers and in Northeastern Oregon where it is 150 percent of last year.

Usually about 37 percent of the average winter's "snow crop" has accumulated by January 1st. This year, current snow surveys indicate the accumulation has reached 48 percent of an average total supply compared with only 26 percent at this date last year.

SOIL MOISTURE:

Watershed soils under the mountain snowpack are only partially "recharged" by fall and early winter rains. At the higher elevations these rains fell as snow and did not contribute to the soil moisture.

These relatively dry soils will absorb from 4 to 9 inches of water from the snowpack as the spring thaw gets under way. This will reduce the total amount of streamflow that can be expected from the good snowpack.

RESERVOIR STORAGE:

Water stored in 26 major reservoirs in the state is 84 percent of the 15 year average. However, greatest shortage is in the 4 southeastern counties and in McKay reservoir in Umatilla County.

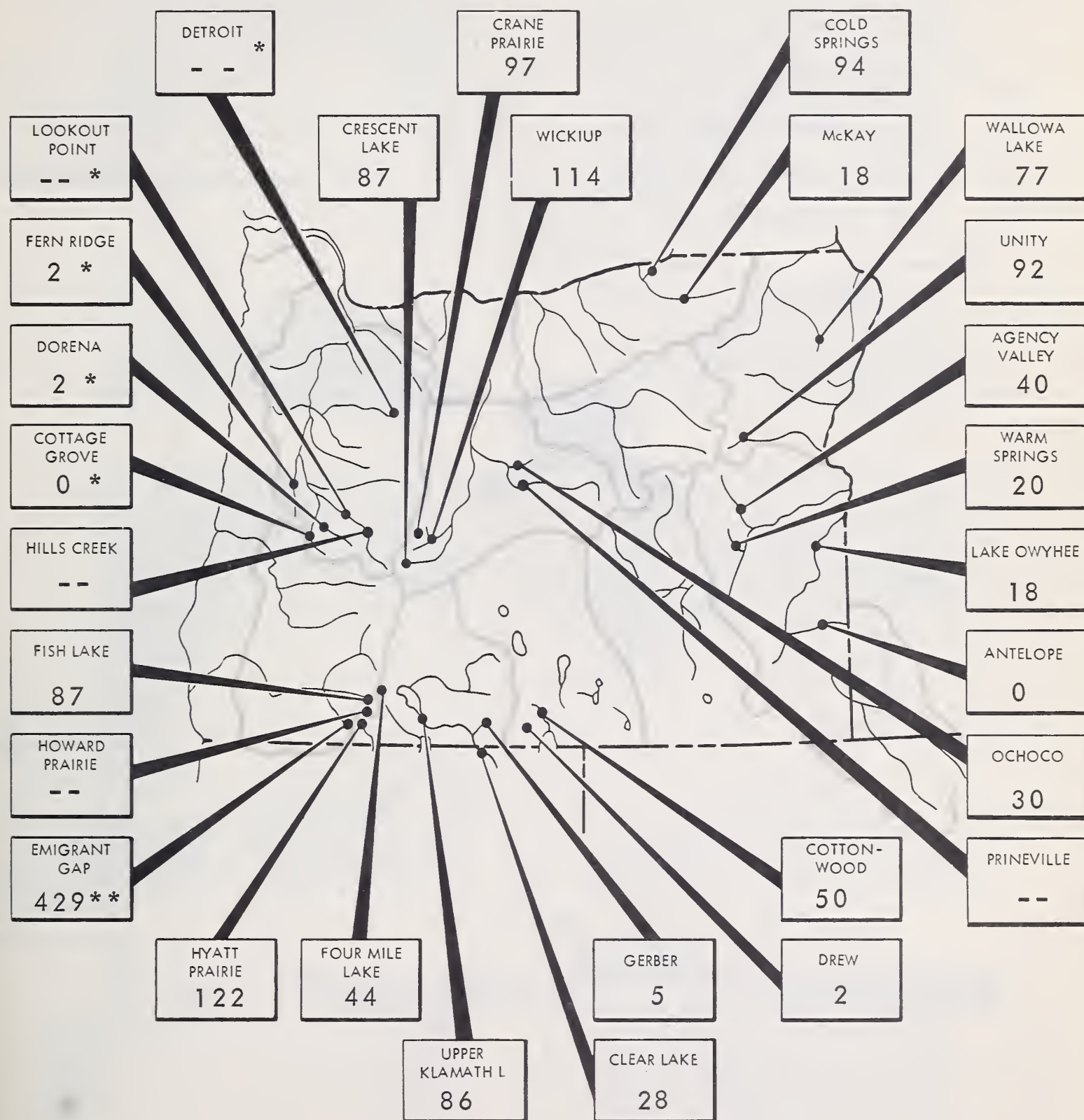
STREAMFLOW:

For entirely adequate state-wide water supplies in the 1962 irrigation season, the remaining winter storms will have to produce above normal accumulations of snow.



STORAGE STATUS of OREGON RESERVOIRS as percent of 1943-57, 15 year average

JANUARY 1, 1962



* - Multiple purpose reservoir - space reserved primarily for flood runoff.

N.R. - No report.

** - Capacity of reservoir greatly increased but current storage compared with previous average.

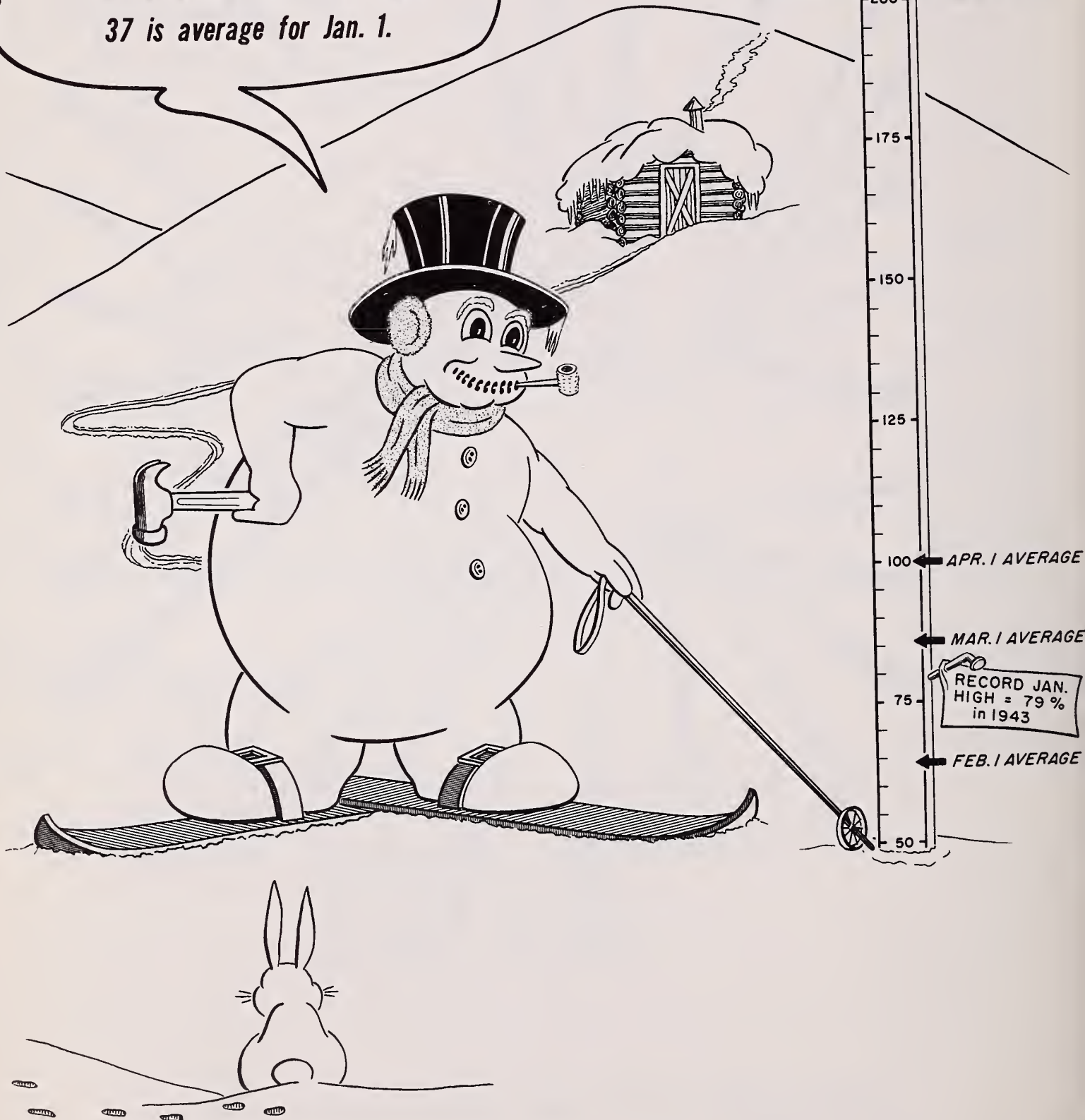
-- Short record - no average for comparison

OREGON SNOW PACK

AS OF JANUARY 1, 1962

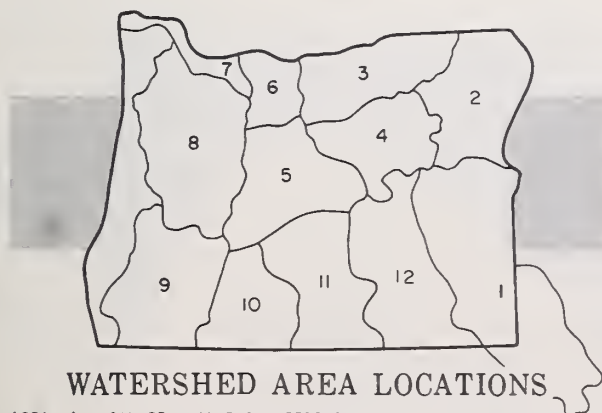
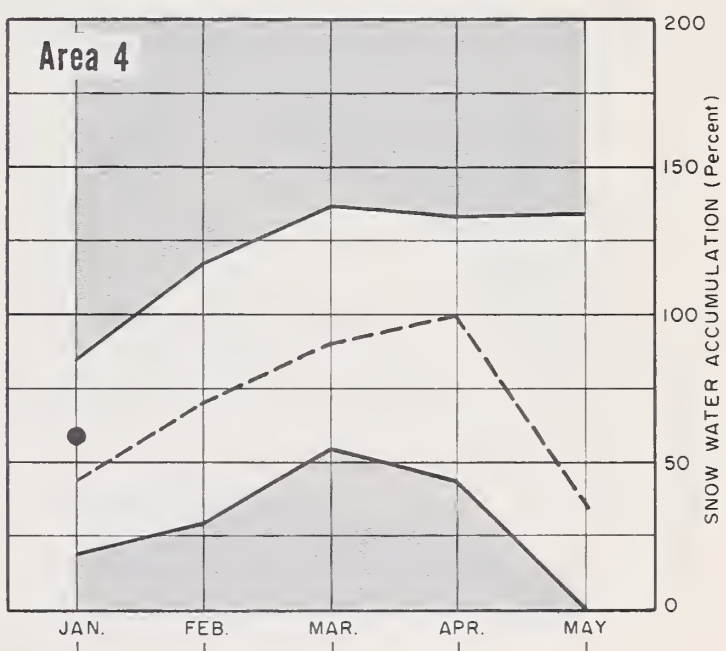
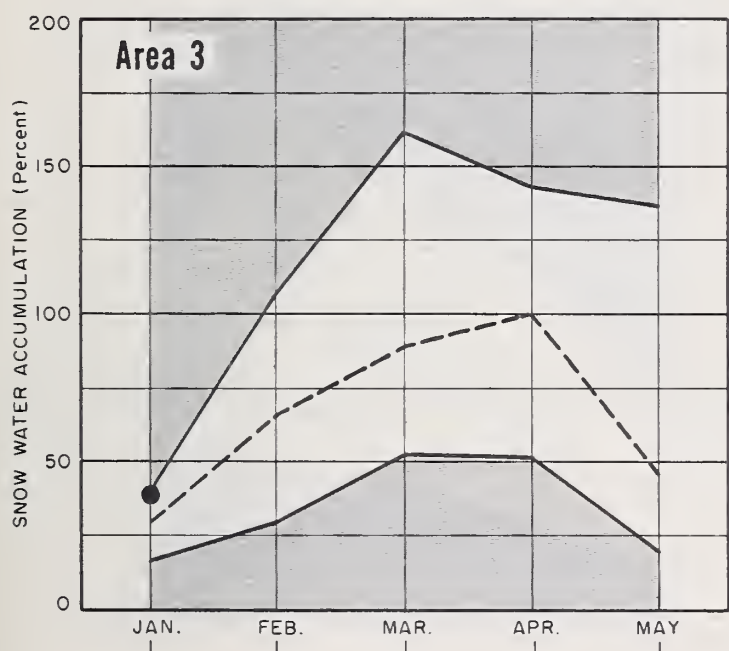
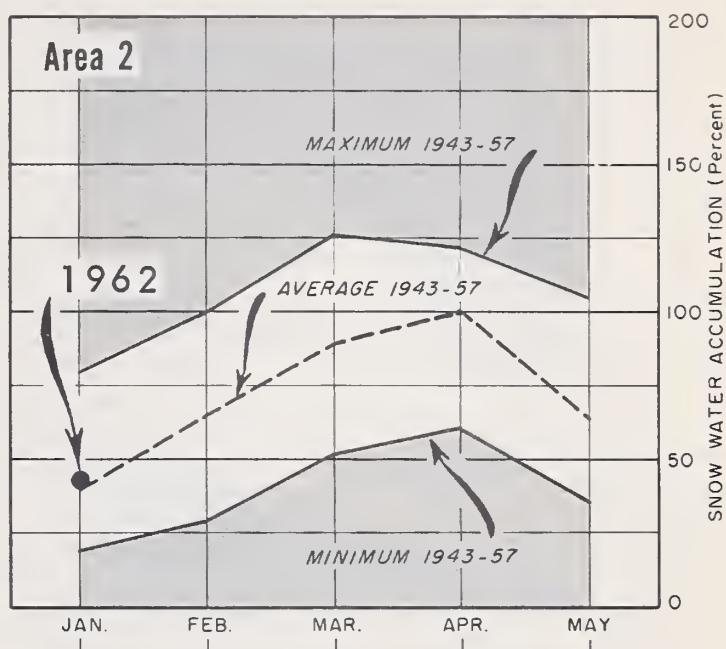
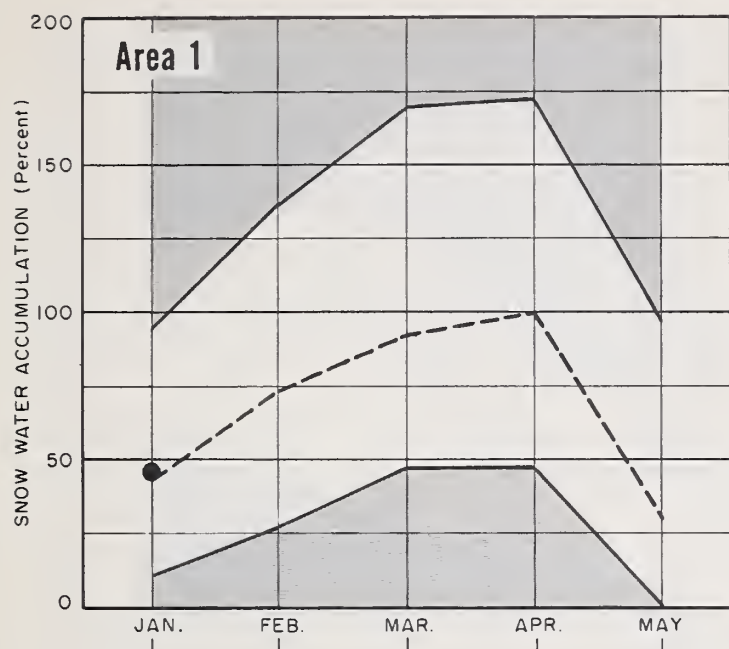
*Looks mighty good!
48 is almost double the
snow we had one year ago.
37 is average for Jan. 1.*

FIGURES ARE PERCENT OF
1943-57 AVERAGE WATER
CONTENT OF SNOW PACK



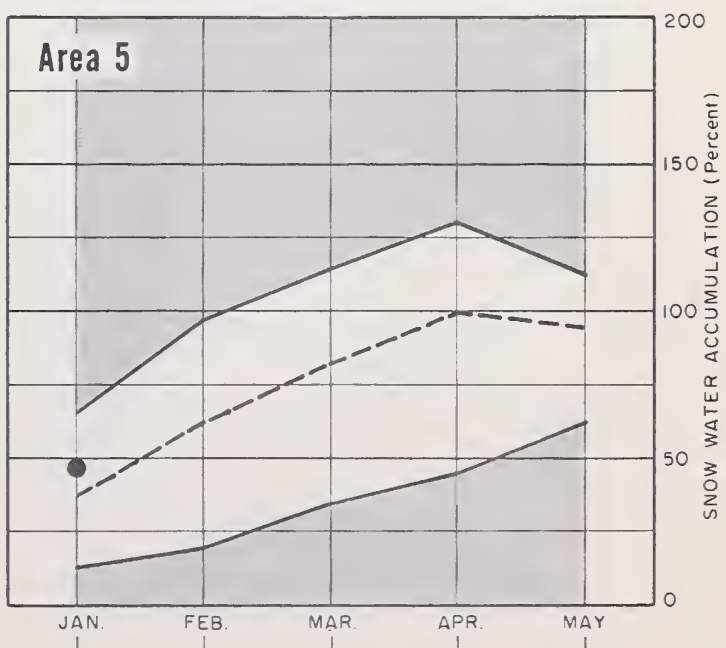
SNOW WATER ACCUMULATION in OREGON

JANUARY 1, 1962



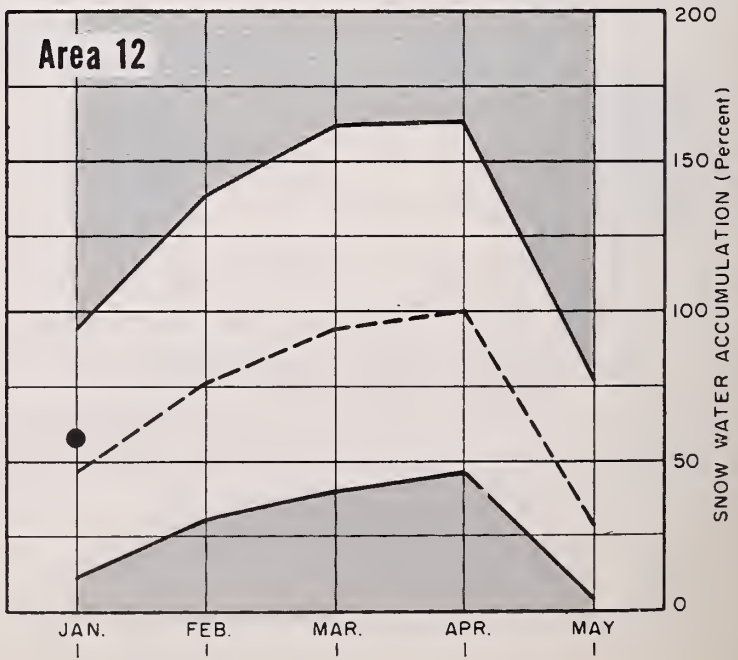
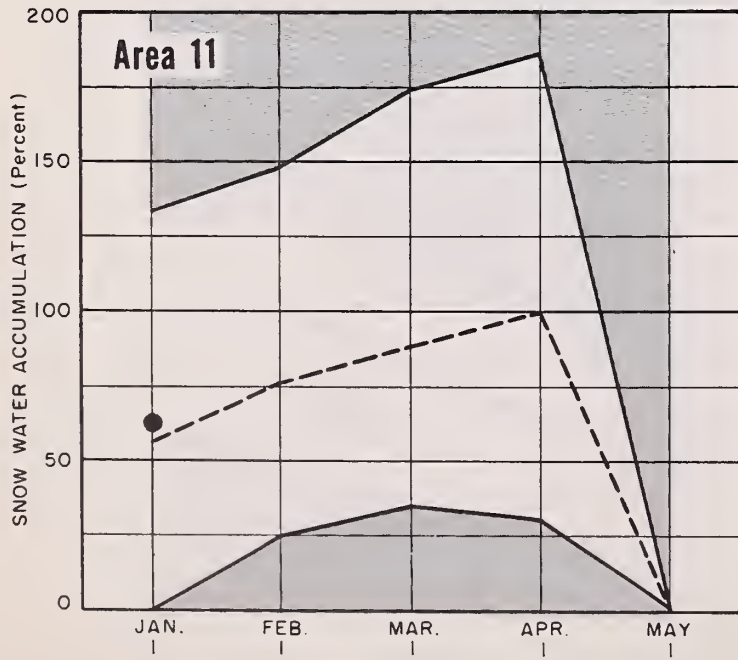
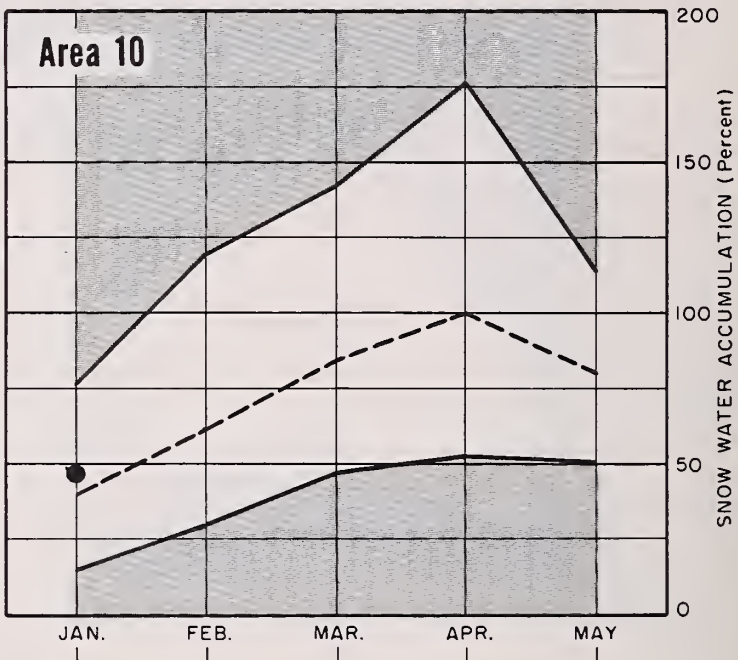
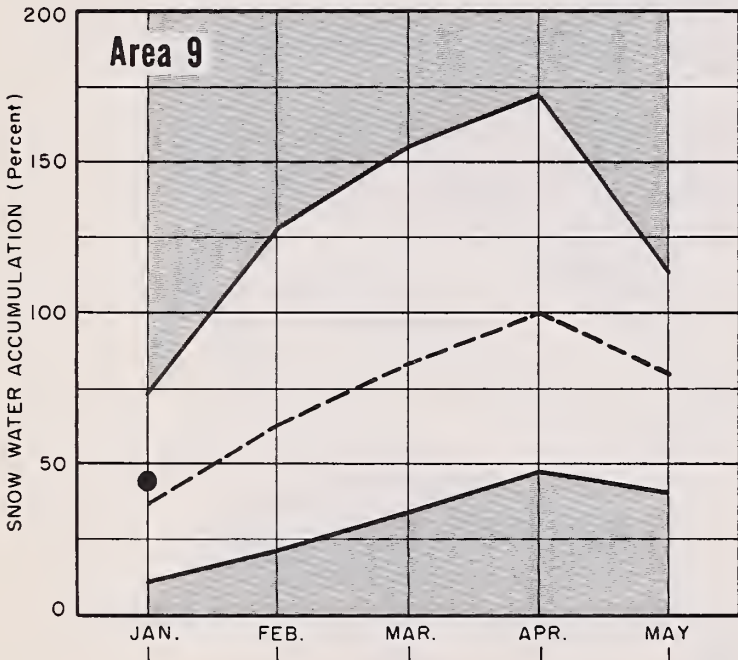
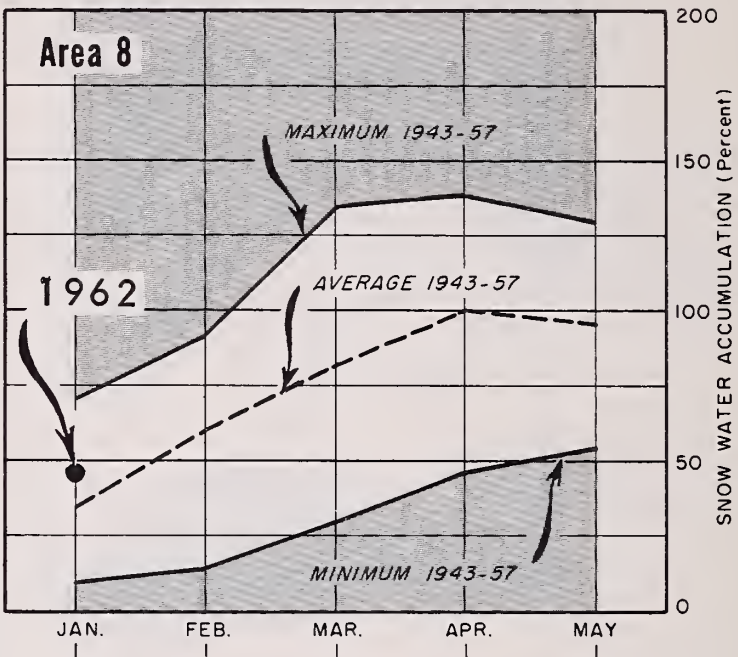
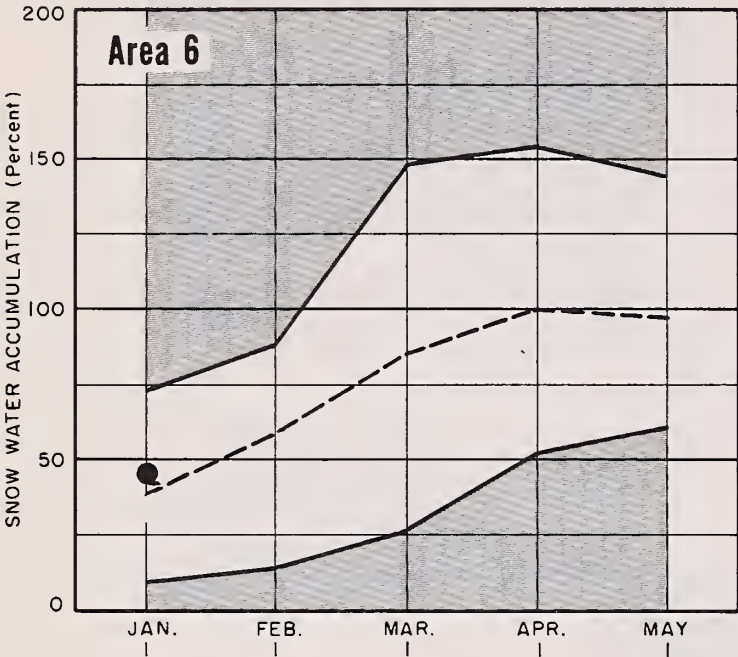
WATERSHED AREA LOCATIONS

- AREA 1 - OXYHEE, MALHEUR WATERSHEDS
- AREA 2 - BURNT, POWDER, PINE, GRANOE RONOE, IMNAHA WATERSHEDS
- AREA 3 - UMATILLA, WALLA WALLA, WILLOW, ROCK, LOWER JOHN OAY WATERSHEDS
- AREA 4 - UPPER JOHN OAY WATERSHEDS
- AREA 5 - UPPER OESCHUTES, CROOKEO, WATERSHEDS
- AREA 6 - HOOD, MILE CREEKS, LOWER DESCHUTES WATERSHEDS
- AREA 7 - LOWER COLUMBIA WATERSHEDS
- AREA 8 - WILLAMETTE WATERSHEDS
- AREA 9 - ROGUE, UMPQUA WATERSHEDS
- AREA 10 - KLAMATH WATERSHEDS
- AREA 11 - LAKE COUNTY, GOOSE LAKE WATERSHEDS
- AREA 12 - HARNEY BASIN WATERSHEDS



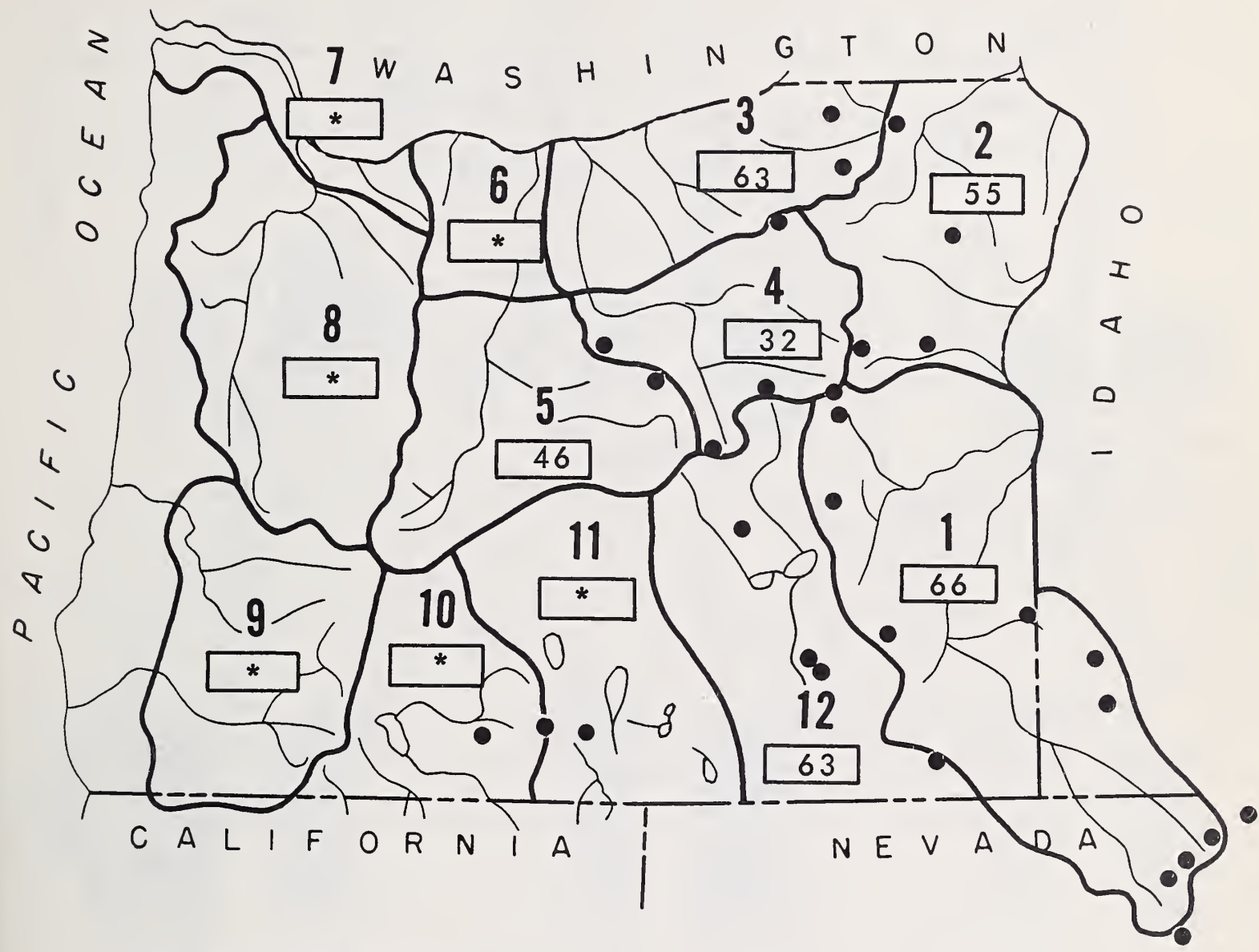
SNOW WATER ACCUMULATION in OREGON

JANUARY 1, 1962



MOUNTAIN SOIL MOISTURE in OREGON as percent of available capacity

JANUARY 1, 1962



● Soil Moisture Station

**Moisture studies not yet developed in these areas.*

VALLEY PRECIPITATION in OREGON ^a

JANUARY 1, 1962



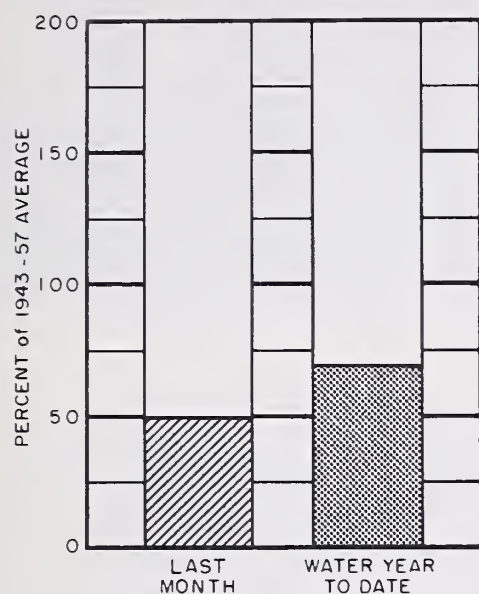
PRECIPITATION as PERCENT of the 1943 - 57 AVERAGE

STATION	LAST MONTH	WATER YEAR TO DATE ^b	STATION	LAST MONTH	WATER YEAR TO DATE ^b
BAKER APT.	117	136	LAKEVIEW	115	109
BEND	115	140	MEDFORD APT.	78	97
BURNS	134	105	NYSSA	68	84
ENTERPRISE	69	142	PENDLETON APT.	81	78
EUGENE APT	105	118	PORTLAND APT.	94	82
HEPPNER	82	73	ROSEBURG APT.	72	128
JOHN DAY	65	99	SALEM APT.	100	81
KLAMATH FALLS APT.	103	113	THE DALLES	136	111

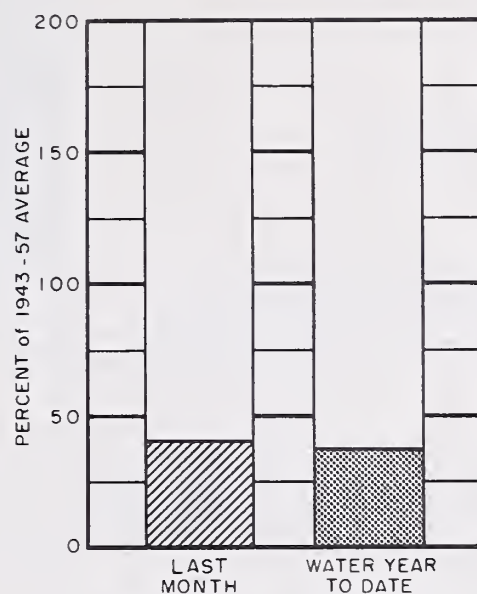
(a) Preliminary data furnished by the U.S. Weather Bureau. (b) Oct. 1 to date. (c) Report delayed.

CURRENT OREGON STREAMFLOW

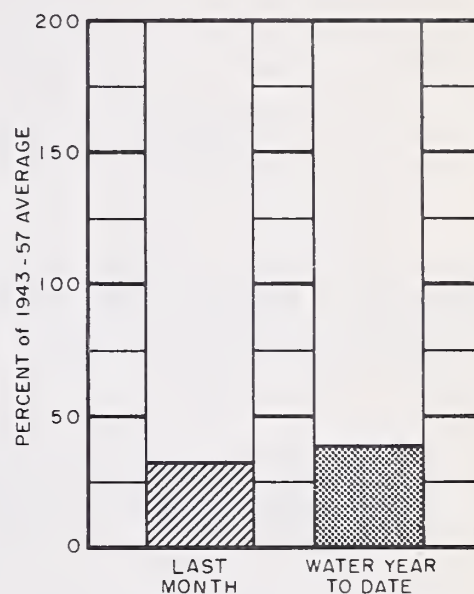
JANUARY 1, 1962



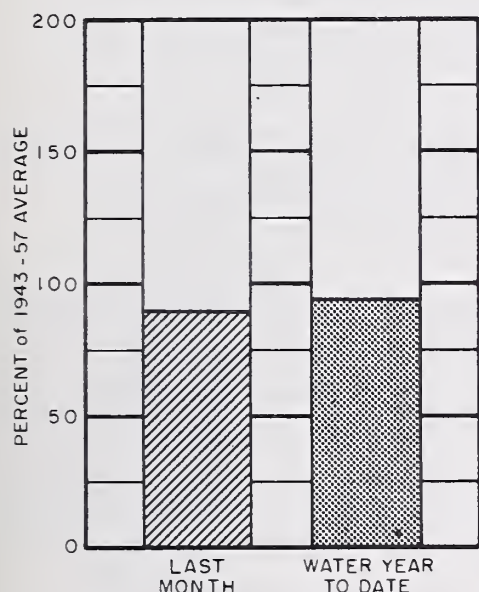
Owyhee Res. net inflow



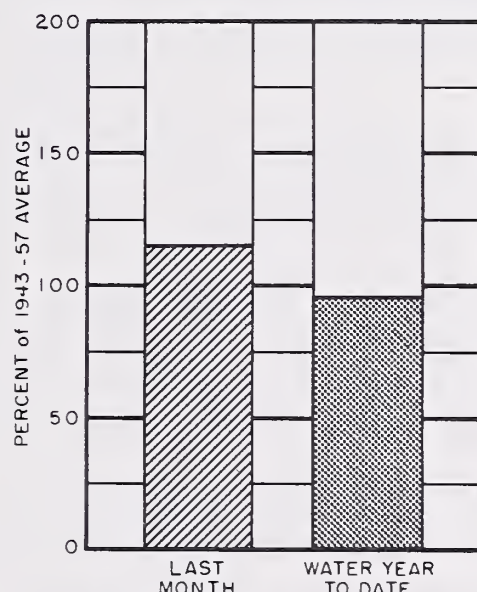
Umatilla near Umatilla



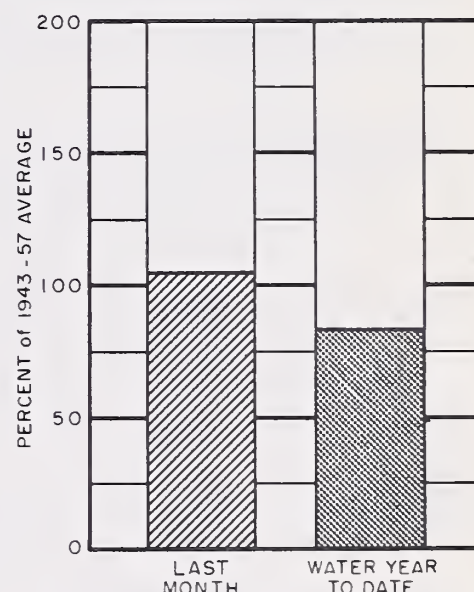
John Day at Service Creek



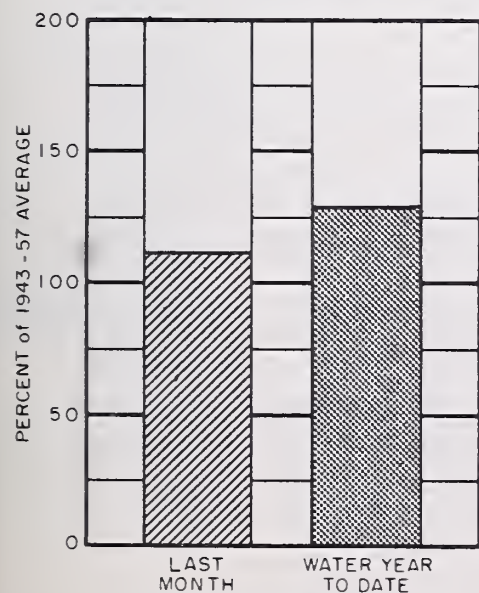
Deschutes at Moody



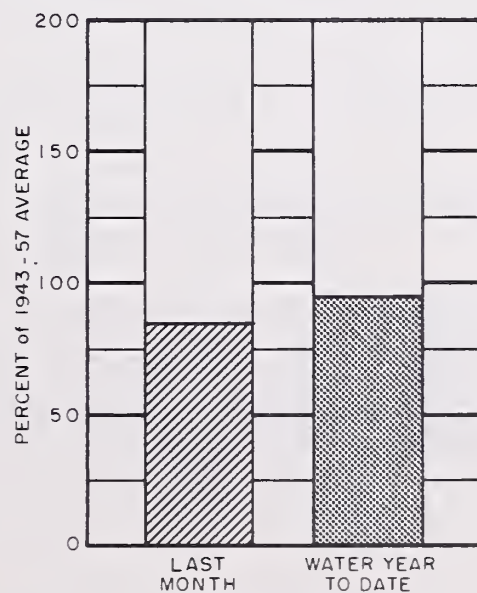
Hood and conduit near Hood River



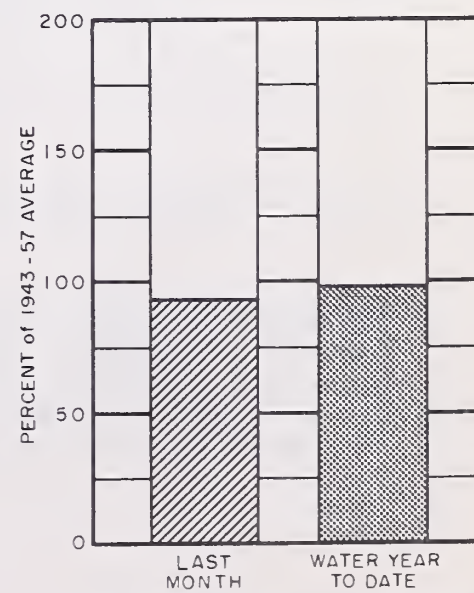
Mid. Fk. Willamette below No. Fk.



Umpqua near Elkton



Rogue at Raygold



Upper Klamath Lake net inflow



WATER SUPPLY OUTLOOK OWYHEE, MALHEUR WATERSHEDS

OREGON

as of

JANUARY 1, 1962



U. S. D. A. SOIL CONSERVATION SERVICE - OREGON
AGRIC. EXPERIMENT STATION - OREGON STATE ENGINEER

GENERAL OUTLOOK - The outlook for irrigation water supplies in Malheur County in 1962 at this early winter date is extremely pessimistic in spite of a good mountain snowpack which is slightly better than average for January 1.

The dim outlook is chargeable directly to watershed soils which are drier than last year, and to record low storage in reservoirs of the county. Remaining winter storms will have to produce super-abundant moisture, preferably as snow, to provide even average water supplies for county lands.

SNOW COVER - Snow cover on the Owyhee is 150 percent of last year and 106 percent of average (1943-57) for this date. On the Malheur watersheds, the snowpack is 231 percent of last year and 109 percent of the 15 year average for January 1.

SOIL MOISTURE - Selected soil-moisture stations indicate slightly less moisture than last year at this date in the soil-mantle of the upper watersheds. Unless rain or mid-winter snowmelt fills the soil, there can be as much as 9 inches of snowmelt water lost from the snowpack to recharge the soil-mantle, reducing streamflow considerably.

RESERVOIR STORAGE - Total water stored on January 1 in Agency Valley and Warm Springs reservoirs is about 21,000 acre feet compared with 36,000 at this date last year. The 15 year average storage is close to 79,000 acre feet for the January 1 date.

The big Owyhee reservoir now holds about 68,000 acre feet compared with 195,000 last year at this time. The 15 year average is about 378,000 acre feet.

Antelope reservoir is reported to be empty - the outlet was lowered last season to permit draining the last drop of water for use.

These record low figures of storage will have to increase by great strides if water is to be available in sufficient quantity next season.

STREAMFLOW - One striking indication of the extreme dryness of these Southeastern watersheds is the slowness with which they begin to produce streamflow after the extreme summer drought. Records show that flow of the Owyhee River since October 1st has been only 69 percent of average. The December flow was only 50 percent of average.

WATER SUPPLY OUTLOOK

expressed as "Poor", "Fair"
"Average" or "Excellent"

STREAM or AREA	FLOW PERIOD	
	SPRING SEASON	LATE SEASON
Boulder Creek	Forecasts begin in the February 1 report which will reach you about February 9, 1962.	
Bully Creek		
Cow Creek		
Jordan Creek		
Jordan Valley Irrig. Dist.		
McDermitt Creek		
Oregon Canyon Creek		
Owyhee Project		
Succor Creek		
Ten Mile Creek		
Vale Oregon Irrig. Dist.		
Warm Springs Irrig. Dist.		
Willow Creek		

RESERVOIR STORAGE (1,000 Ac. Ft.)

RESERVOIR	USABLE CAPACITY	MEASURED (First of Month)		
		THIS YEAR	LAST YEAR	1943-57 AVERAGE
Agency Valley	60.0	9.4	15.4	23.6
Antelope	55.0	0.0	- -	2.5
Owyhee	715.0	68.5	195.1	377.8
Warm Springs	191.0	11.3	20.4	55.2

STREAMFLOW FORECASTS^a(1,000 Ac. Ft.)

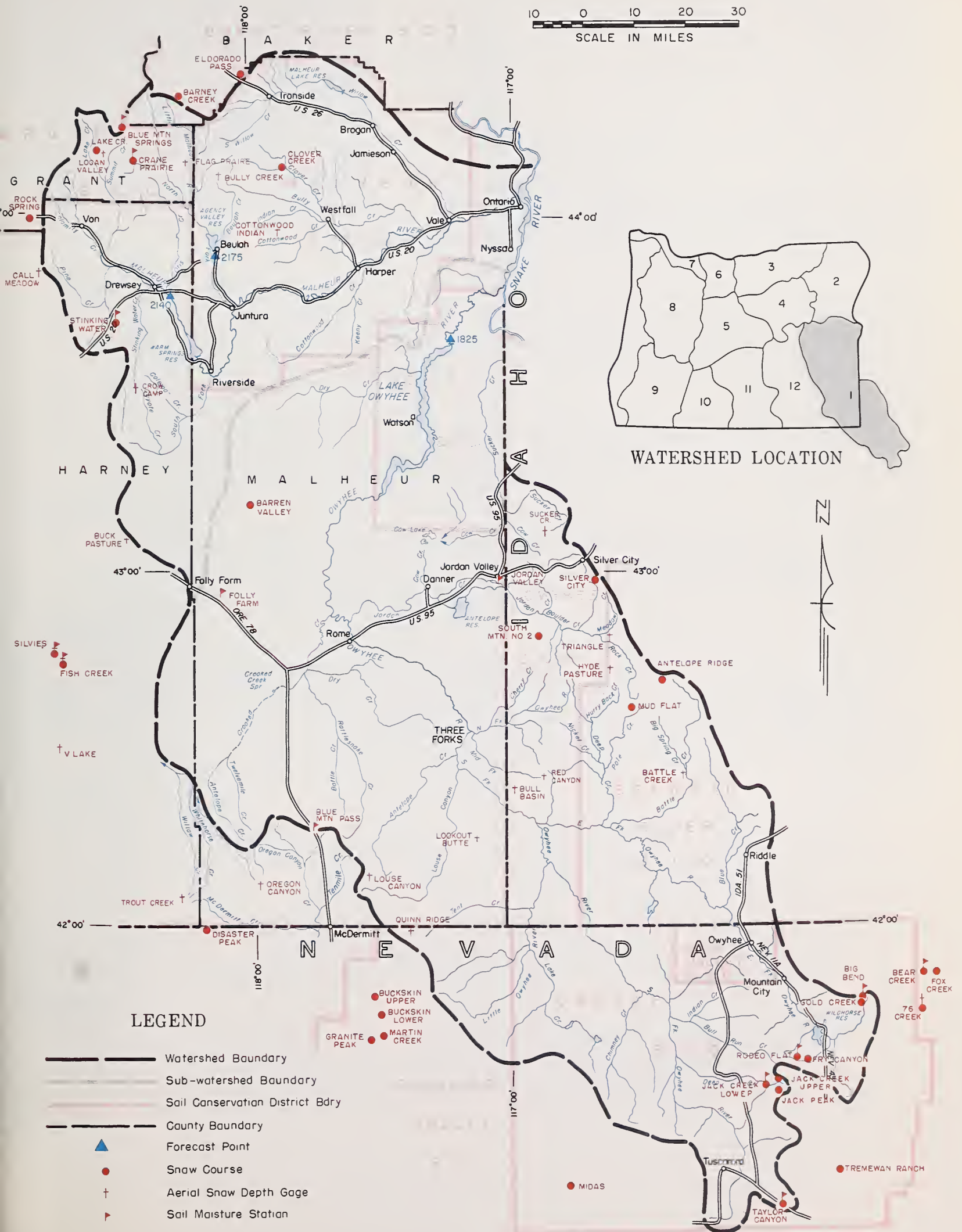
FORECAST POINT		FORECAST THIS YEAR	FORECAST PERIOD	1943-57 AVERAGE	THIS YEAR AS PERCENT OF AVERAGE ^c
NO.	NAME				
2140	Malheur near Drewsey	c	April-Sept.	81	
			April-July	80	
2175	Malheur, North Fork at Beulah ^d	c	April-Sept.	64	
1825	Owyhee Reservoir net Inflow ^e	c	April-Sept.	430	
			April-July	412	

AVAILABLE SOIL MOISTURE

STATION		PROFILE (Inches)		SOIL MOISTURE (Inches)			
		DEPTH	AVAILABLE CAPACITY	DATE	THIS YEAR	LAST YEAR	2 YEARS AGO
NAME							
ELEVATION							
Bear Creek (Nev.)	7800	60	7.0	c			
Big Bend (Nev.)	6700	48	9.6	12/28/61	6.7	7.3 ⁱ	8.6
Blue Mountain Springs	5900	42	12.0	12/27/61	2.6	1.3 ⁱ	- -
Folly Farm	4450	30	6.9	12/21/61	4.0 ^j	5.5 ^j	5.3 ^j
Jack Creek, Lower (Nev.)	6800	48	4.9	12/29/61	4.1	3.8	3.3
Jordan Valley	4250	48	9.8	12/21/61	4.7	4.7	4.9
Rodeo Flat (Nev.)	6800	42	6.0	h			
Stinking Water Summit	4800	48	11.7	12/21/61	10.4 ^j	11.0 ^j	10.6 ^j
Taylor Canyon (Nev.)	6200	48	9.7	12/29/61	5.9	6.4	6.2

(a) Assuming normal meteorological conditions. (b) 1943-57, 15 year period. (c) Not scheduled. (d) Corrected to natural flow. (e) Aerial snow depth gage; water content estimated. (f) Report delayed. (g) USBR records of inflow. (h) Not surveyed. (i) Nearest current data. (j) Partly estimated. (*) 1943-57 Adjusted average.

OWYHEE, MALHEUR WATERSHEDS



Owyhee, Malheur Watersheds

SNOW

SNOW COURSE		CURRENT INFORMATION			PAST RECORD	
		DATE OF SURVEY	SNOW DEPTH (Inches)	WATER CONTENT (Inches)	WATER CONTENT (Inches)	
NAME	ELEVATION				LAST YEAR	1943-57 AVERAGE
Antelope Ridge	5900	c				
Barney Creek	5950	c				
Battle Creek	5700	c				
Bear Creek	7800	12/28	31	8.1	6.2	7.1*
Big Bend	6700	12/28	14	3.3	2.5	3.3*
Blue Mountain Spring	5900	12/27	34	10.5	5.8	6.9*
Buck Pasture	5700	c				
Buckskin, Lower	6700	c				
Buckskin, Upper	7200	c				
Bull Basin ^e	5600	c				
Bully Creek ^e	5300	c				
Call Meadows ^e	5340	c				
Clover Creek	4100	h				
Cottonwood-Indian ^e	4320	c				
Crane Prairie	5375	c				
Disaster Peak	6500	c				
Eldorado Pass	4600	12/28	6	1.5	0.0	- -
Fish Creek	7900	c				
Flag Prairie ^e	4750	c				
Fox Creek	6800	c				
Fry Canyon	6700	12/28	14	3.5	2.3	3.1*
Gold Creek	6600	12/28	10	2.5	1.2	1.9*
Granite Peak	7800	c				
Hyde Pasture ^e	5800	c				
Jack Creek, Lower	6800	12/29	8	1.8	1.5	1.1*
Jack Creek, Upper	7250	12/29	20	4.8	3.0	3.5*
Jack Peak	8420	c				
Lake Creek	5120	12/28	22	6.0	2.0	- -
Logan Valley ^e	5100	c				
Lookout Butte ^e	5650	c				
Louse Canyon ^e	6440	c				
Martin Creek	6700	c				
Midas	7200	c				
Mud Flat ^e	5500	c				
Oregon Canyon ^e	6950	c				
Quinn Ridge ^e	6300	c				
Red Canyon ^e	6500	c				
Rock Spring	5100	12/27	13	2.3	1.0	2.7*
Rodeo Flat	6800	12/28	9	2.5	2.4	3.3*
Silver City	6400	12/30	25	8.1	3.5	6.6*
Silvies	6900	c				
South Mountain No. 2	6340	12/29	14	3.5	3.2	5.2*
Stinking Water	4800	1/1	T	T	T	2.1*
Taylor Canyon	6200	12/29	8	1.8	0.8	1.8*
Tremewan Ranch	5700	12/28	T	T	T	0.7*
Triangle ^e	5150	c				
Trout Creek ^e	7800	c				
76 Creek	7100	c				
"V" Lake ^e	6600	c				

"The Conservation of Water begins with the Snow Survey"

WATER SUPPLY OUTLOOK BURNT, POWDER, PINE, GRANDE RONDE, IMNAHA WATERSHEDS OREGON

as of
JANUARY 1, 1962

U. S. D. A. SOIL CONSERVATION SERVICE - OREGON
AGRIC. EXPERIMENT STATION - OREGON STATE ENGINEER

GENERAL OUTLOOK

The outlook for irrigation water supplies in Northeastern Oregon in 1962 at this early winter date is only slightly improved over the reasonably fair outlook just one year ago in spite of a good start on the mountain snowpack, which is slightly better than average.

An unfavorable feature in the outlook is the fact that the snow is underlain with a soil-mantle which is drier than last year. Also, stored water supplies are below average, especially in the southern half.

SNOW COVER

Water content of the snowpack at 13 measured snow courses in this three county area is 114 percent of the January 1 average for the 1943-57 period and is 150 percent of last years' figure at this date.

SOIL MOISTURE

Electronic measurements of soil-moisture in the top 3 to 4 feet of soil in the upper watershed areas indicate soils are generally near capacity in the northern area but become drier to very dry as the southern boundary of the area is approached. As much as 9 inches of snowmelt water may be lost from the snowpack in the spring to satisfy this deficiency, thus reducing total streamflow.

RESERVOIR STORAGE

Total water stored in Wallowa Lake, which was drawn down to the minimum for stock water in the fall, is 12,200 acre feet compared with 12,000 a year ago and with the 15 year average storage on January 1st of 15,800 acre feet.

Unity reservoir, which usually averages 6,000 acre feet on January 1st, now holds 5,500 acre feet compared with about 6,100 acre feet a year ago. No report on the status of storage at Thief Valley reservoir has been received.

STREAMFLOW

In the southern portion of this area, streamflow has been somewhat on the short side since October 1st. Truly adequate water supplies will depend on greater than average snow accumulation during the balance of the winter.

WATER SUPPLY OUTLOOK

expressed as "Poor", "Fair"
"Average" or "Excellent"

STREAM or AREA	FLOW PERIOD	
	SPRING SEASON	LATE SEASON
Alder Slope	Forecasts begin in the February 1 report which will reach you about February 9, 1962.	
Baker Valley		
Big Creek		
Clover Cr. (nr. No. Powder)		
Cove		
Durkee		
Eagle Valley		
Elgin		
Enterprise - Joseph		
Hereford - Bridgeport		
Imnaha River		
LaGrande - Island City		
Lostine - Wallowa		
No. Powder River - Wolf Cr.		
Pine Valley		
Powder River - Elk Creek		
Summerville		
Sumpter Valley		
Union - Hot Lake		
Unity		

RESERVOIR STORAGE (1,000 Ac. Ft.)

RESERVOIR	USABLE CAPACITY	MEASURED (First of Month)		
		THIS YEAR	LAST YEAR	1943-57 AVERAGE
Unity	25.2	5.5	6.1	6.0
Wallowa Lake	37.5	12.2	12.0	15.8

STREAMFLOW FORECASTS^a(1,000 Ac. Ft.)

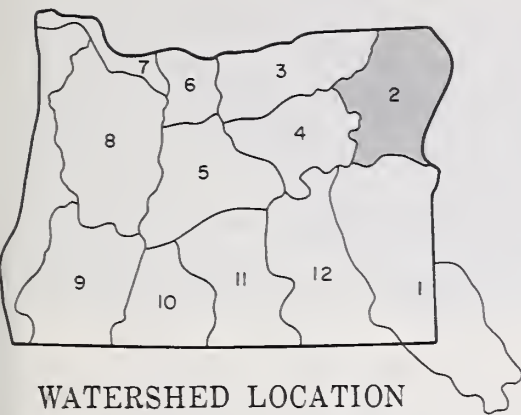
FORECAST POINT		FORECAST THIS YEAR	FORECAST PERIOD	1943-57 AVERAGE	THIS YEAR AS PERCENT OF AVERAGE ^b
NO.	NAME				
3305	Bear near Wallowa	c	April-Sept.	74	
2730	Burnt near Hereford ^d	c	April-Sept.	45	
			April-June	41	
3200	Catherine near Union	c	April-Sept.	73	
3190	Grande Ronde at LaGrande	c	April-Sept.	202	
3295	Hurricane near Joseph	c	April-Sept.	49	
2920	Imnaha at Imnaha	c	April-Sept.	314	
3300	Lostine near Lostine	c	April-Sept.	133	
2755	Powder near Baker	c	April-Sept.	66	
			April-July	65	
3250	Wallowa, East Fork near Joseph ^d	c	April-Sept.	12.1	
			April-July	9.7	

AVAILABLE SOIL MOISTURE

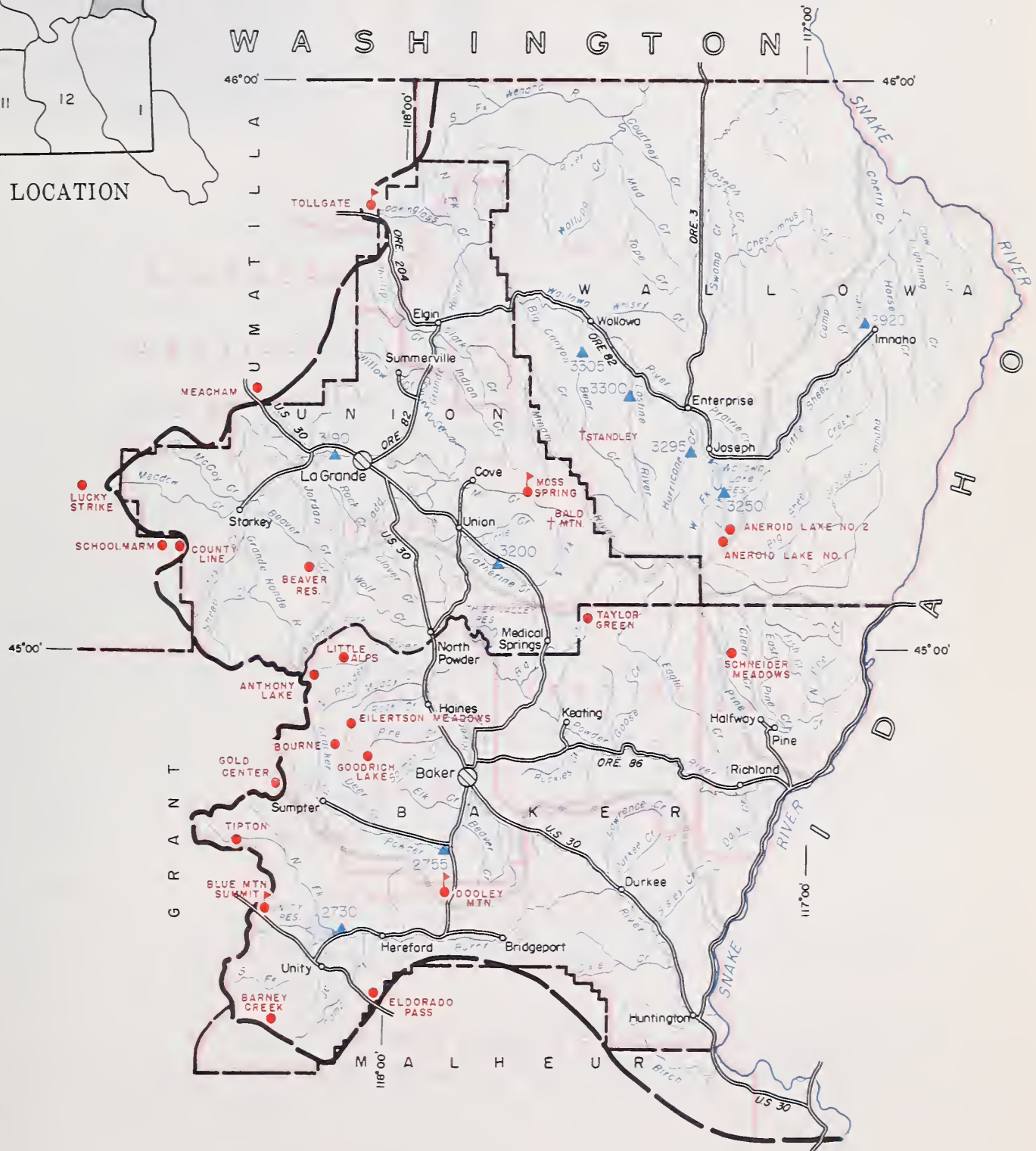
STATION		PROFILE (Inches)		SOIL MOISTURE (Inches)			
		DEPTH	AVAILABLE CAPACITY	DATE	THIS YEAR	LAST YEAR	2 YEARS AGO
NAME	ELEVATION						
Blue Mountain Summit	5100	36	10.4	12/26/61	0.7	3.0	2.3
Emigrant Springs	3925	48	15.0	12/21/61	7.9	11.8	14.4
Tollgate	5070	48	17.8	12/22/61	15.3 ^j	15.9	16.3

(a) Assuming normal meteorological conditions. (b) 1943-57, 15 year period. (c) Not scheduled. (d) Corrected to natural flow. (e) Aerial snow depth gage; water content estimated. (f) Report delayed. (g) Water content partly estimated. (h) Not surveyed. (i) Nearest current data. (j) Partly estimated. (*) 1943-57 Adjusted averages.

BURNT, POWDER, PINE, GRANDE RONDE, IMNAHA WATERSHEDS



10 0 10 20 30
SCALE IN MILES



LEGEND

- Watershed Boundary
- Sub-watershed Boundary
- Soil Conservation District Bdry.
- County Boundary
- ▲ Forecast Point
- Snow Course
- ▲ Soil Moisture Station
- ✕ Aerial Snow Depth Gage

SNOW

SNOW COURSE		CURRENT INFORMATION			PAST RECORD	
		DATE OF SURVEY	SNOW DEPTH (Inches)	WATER CONTENT (Inches)	WATER CONTENT (Inches)	
NAME	ELEVATION				LAST YEAR	1943-57 AVERAGE
Aneroid Lake No. 1	7480	c				
Aneroid Lake No. 2	7000	c				
Anthony Lake	7125	12/27	49	14.6	11.8	12.6*
Bald Mountain ^e (Ore.)	6700	c				
Barney Creek	5950	c				
Beaver Reservoir	5340	12/27	23	6.1	4.3	5.1*
Blue Mountain Summit	5098	12/26	23	4.8	3.1	4.3
Bourne	5800	c				
County Line	4800	12/29	15	3.6	2.7	3.4*
Dooley Mountain	5430	12/26	21	4.9	2.9	4.0
Eilertson Meadows	5400	12/27	24	6.0	3.9	5.2*
Eldorado Pass	4600	12/28	6	1.5	0.0	- -
Gold Center	5340	c				
Goodrich Lake	6775	c				
Little Alps	6200	12/27	33	9.0	5.3	- -
Lucky Strike	5050	c				
Meacham	4300	12/21	22	4.5	2.4	- -
Moss Spring	5850	12/28	46	11.6	8.2	10.8
Schneider Meadows	5400	c				
Schoolmarm	4775	12/29	13	3.9	2.4	2.8*
Standley ^e	7400	c				
Taylor Green	5740	c				
Tipton	5100	12/26	24	5.5	4.6	5.3*
Tollgate	5070	12/22	40	11.7	6.8	- -

WATER SUPPLY OUTLOOK UMATILLA, WALLA WALLA, WILLOW, ROCK, LOWER JOHN DAY WATERSHEDS

OREGON

as of
JANUARY 1, 1962

U. S. D. A. SOIL CONSERVATION SERVICE - OREGON
AGRIC. EXPERIMENT STATION - OREGON STATE ENGINEER

GENERAL OUTLOOK

The outlook for irrigation water supplies in Oregon's wheat belt in 1962, at this early winter date, is more favorable than a year ago with mountain snow cover somewhat better than average.

However, watershed soils under the snow are drier than last year and stored water supplies are substantially less than on January 1st last year.

SNOW COVER

Snow surveys made near January 1st in key locations in the Blue Mountains have recorded nearly twice the water content in the snow compared with last year at this date.

SOIL MOISTURE

Fall rains approached normal amounts only in November and have failed to replenish the moisture in the soil-mantle on upper watersheds now under snow. Recent measurements indicate these soils are currently drier than a year ago and have been "primed" only to about 63 percent of capacity. To fill the soils up to their moisture holding capacity may rob the snowpack of as much as 7 inches of water at the beginning of the snowmelt season.

RESERVOIR STORAGE

Total water now stored in Cold Springs reservoir is about 19,000 acre feet compared with 24,200 a.f. a year ago. The 15 year average storage here is about 20,200 acre feet.

Current storage in McKay reservoir is about 4,700 acre feet compared with 11,800 a.f. a year ago. The average for the 15 year period 1943-57 is about 26,000 acre feet.

STREAMFLOW

Flow of the Umatilla River near Umatilla* has averaged only 37 percent of normal since October 1st and December flow was only 39 percent of the 1943-57 average. Below normal rains have failed to recharge the watershed to average conditions.

*Preliminary data furnished by U. S. Geological Survey, Portland, Oregon

WATER SUPPLY OUTLOOK

expressed as "Poor", "Fair",
"Average" or "Excellent"

RESERVOIR STORAGE (1,000 Ac. Ft.)

STREAM or AREA	FLOW PERIOD	
	SPRING SEASON	LATE SEASON
Birch Creek		
Butter Creek		
Dry Creek		
Dugger Creek		
Johnson Creek		
McKay Creek		
Mill Creek		
Mud Creek		
Pine Creek		
Rhea Creek		
Rock Creek		
Umatilla River (Cold Springs Res.)		
Umatilla River, Main		
Umatilla River (McKay Res.)		
Walla Walla River, Little		
Walla Walla River, Main		
Walla Walla River, N. Fork		
Walla Walla River, S. Fork		
Willow Creek		

Forecasts begin in the February 1 report which will reach you about February 9, 1962.

RESERVOIR	USABLE CAPACITY	MEASURED (First of Month)		
		THIS YEAR	LAST YEAR	1943-57 AVERAGE
Cold Springs	50.0	19.0	24.0	20.2
McKay	73.8	4.7	11.8	26.0

STREAMFLOW FORECASTS^a(1,000 Ac. Ft.)

FORECAST POINT		FORECAST THIS YEAR	FORECAST PERIOD	1943-57 AVERAGE	THIS YEAR AS PERCENT OF AVERAGE ^b
NO.	NAME				
0225	McKay near Pilot Rock	c	April-Sept. April-July	31 31	
0200	Umatilla near Gibbon	c	April-Sept.	96	
0210	Umatilla at Pendleton	c	April-Sept. April-July	187 182	
0100	Walla Walla, South Fork near Milton	c	April-Sept. April-July	76 62	

AVAILABLE SOIL MOISTURE

STATION		PROFILE (Inches)		SOIL MOISTURE (Inches)			
		DEPTH	AVAILABLE CAPACITY	DATE	THIS YEAR	LAST YEAR	2 YEARS AGO
NAME	ELEVATION						
Athena-Weston	1700	48	11.8	12/22/61	6.2	7.2	5.5
Battle Mountain Summit	4340	48	8.0	12/30/61	3.9	5.8	4.4
Emigrant Springs	3925	48	15.0	12/21/61	7.9	11.8	14.4
Tollgate	5070	48	17.8	12/22/61	15.3 ^h	15.9	16.3

SNOW

SNOW COURSE		CURRENT INFORMATION			PAST RECORD	
		DATE OF SURVEY	SNOW DEPTH (Inches)	WATER CONTENT (Inches)	WATER CONTENT (Inches)	
NAME	ELEVATION				LAST YEAR	1943-57 AVERAGE
Arbuckle Mountain	5400	c				
Battle Mountain Summit	4340	12/30	11	3.4	T	--
Emigrant Springs	3925	12/21	15	2.9	1.5	--
Lucky Strike	5050	c				
Meacham	4300	12/21	22	4.5	2.4	--
Tollgate	5070	12/22	40	11.7	6.8	--

(a) Assuming normal meteorological conditions. (b) 1943-57, 15 year period. (c) Not scheduled. (d) Corrected to natural flow. (e) Aerial snow depth gage; water content estimated. (f) Report delayed. (g) Nearest current data. (h) Partly estimated.

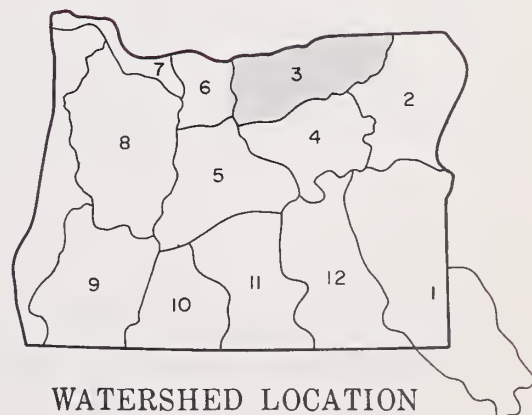
UMATILLA, WALLA WALLA, WILLOW, ROCK, LOWER JOHN DAY WATERSHEDS

10 0 10 20 30
SCALE IN MILES



LEGEND

- Watershed Boundary
- Sub-watershed Boundary
- Soil Conservation District Bdry
- County Boundary
- ▲ Forecast Point
- Snow Course
- ▼ Soil Moisture Station



WATER SUPPLY OUTLOOK UPPER JOHN DAY WATERSHEDS OREGON

as of
JANUARY 1, 1962

U. S. D. A. SOIL CONSERVATION SERVICE - OREGON
AGRIC. EXPERIMENT STATION - OREGON STATE ENGINEER

GENERAL OUTLOOK

The outlook for irrigation water supplies in the John Day area in 1962, at this early winter date, is more favorable than on January 1st last year with mountain snow accumulation well above average.

However, the soil-mantle on upper watersheds under the snow is drier than last year and must be "recharged" before significant runoff from snowmelt can be produced.

SNOW COVER

Water content of the mountain snowpack at 11 key snow courses in the Blue and Ochoco Mountains is recorded at 131 percent of the 1943-57 average and a satisfying big 177 percent of last year at this date.

SOIL MOISTURE

This good snow cover, however, is lying over relatively dry soils which may rob the snowpack of as much as 9 inches of water to "prime" the upper watershed soils to capacity. This could reduce the total stream-flow produced from regular spring snowmelt.

STREAMFLOW

Flow of the John Day River at Service Creek* has been only 41 percent of the 1943-57 average since October 1st and the December flow was only 31 percent of the average.

A continuation of above normal accumulation of mountain snow will be needed to produce adequate supplies of irrigation water in 1962.

*Preliminary data furnished by U.S. Geological Survey, Portland, Oregon

WATER SUPPLY OUTLOOK

expressed as "Poor", "Fair",
"Average" or "Excellent"

STREAM or AREA	FLOW PERIOD	
	SPRING SEASON	LATE SEASON
Beech Creek Beech Creek-Fox-Long Cr. Bridge-Mountain Creeks Camas Creek Cherry Creek Indian-Pine Creeks John Day River, Main Fork John Day River, Mid. Fork John Day River, N. Fork John Day River, S. Fork Monument-Kimberly Strawberry Creek	Forecasts begin in the February 1 report which will reach you about February 9, 1962.	

RESERVOIR STORAGE (1,000 Ac. Ft.)

RESERVOIR	USABLE CAPACITY	MEASURED (First of Month)		
		THIS YEAR	LAST YEAR	1943-57 AVERAGE

STREAMFLOW FORECASTS^a(1,000 Ac. Ft.)

FORECAST POINT		FORECAST THIS YEAR	FORECAST PERIOD	1943-57 AVERAGE	THIS YEAR AS PERCENT OF AVERAGE ^b
NO.	NAME				
0385	John Day at Prairie City	c	April-Sept. April-July	54 49	
0440	John Day, Middle Fork at Ritter	c	April-Sept. April-July	135 131	
0375	Strawberry near Prairie City	c	April-Sept.	9.1	

AVAILABLE SOIL MOISTURE

STATION		PROFILE (Inches)		SOIL MOISTURE (Inches)			
		DEPTH	AVAILABLE CAPACITY	DATE	THIS YEAR	LAST YEAR	2 YEARS AGO
NAME	ELEVATION						
Battle Mountain Summit	4340	48	8.0	12/30/61	3.9	5.8	4.4
Blue Mountain Springs	5900	42	12.0	12/27/61	2.6	1.3 ^h	- -
Blue Mountain Summit	5100	36	10.4	12/26/61	0.7	3.0	2.3
Derr	5670	24	6.0	c			
Marks Creek	4540	36	8.3	12/27/61	3.8	4.3	5.6
Snow Mountain	6300	48	10.4	c			
Starr Ridge	5150	36	6.1	12/26/61	2.2	3.3	4.9

SNOW

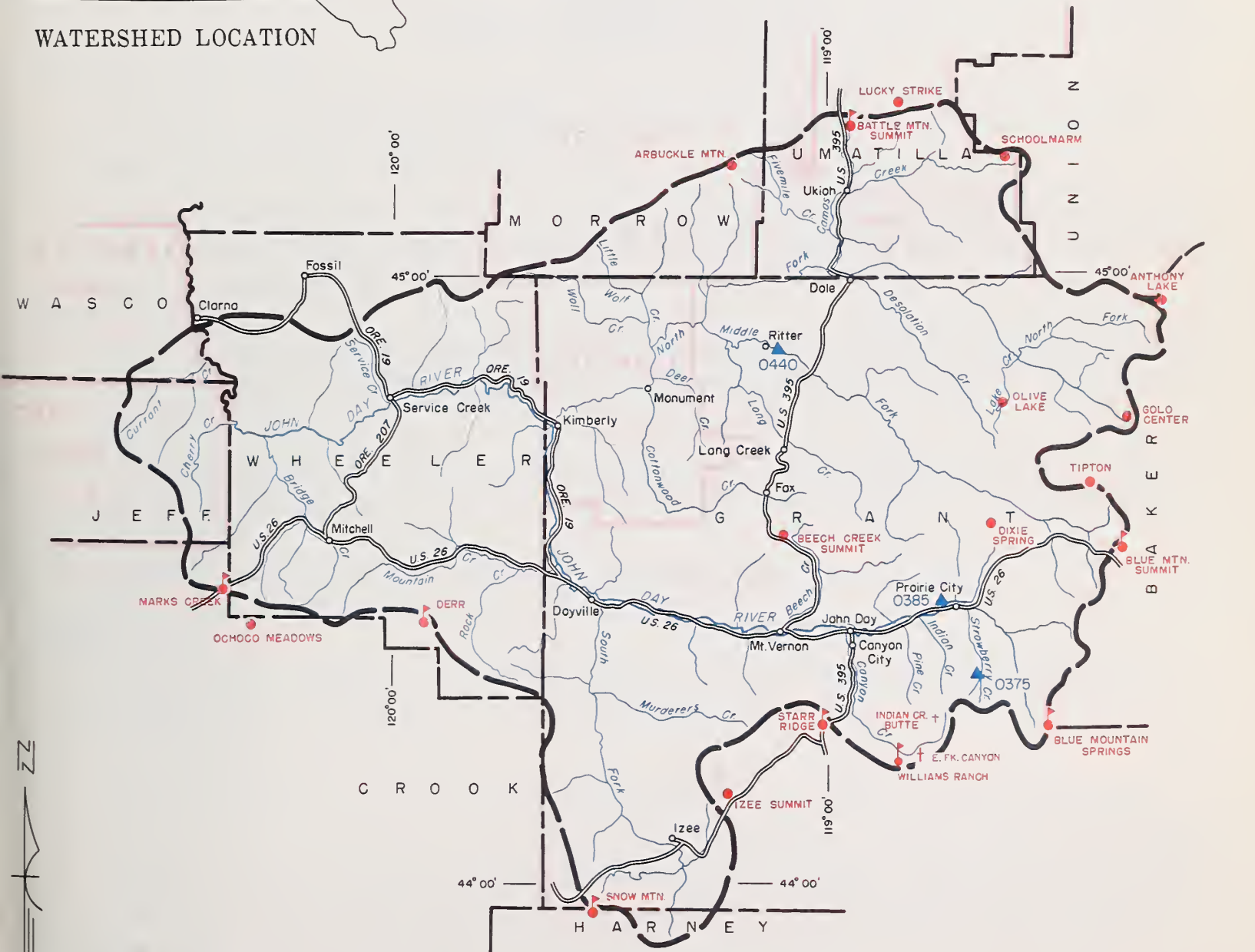
SNOW COURSE		CURRENT INFORMATION			PAST RECORD	
		DATE OF SURVEY	SNOW DEPTH (Inches)	WATER CONTENT (Inches)	WATER CONTENT (Inches)	
NAME	ELEVATION				LAST YEAR	1943-57 AVERAGE
Anthony Lake	7125	12/27	49	14.6	11.8	12.6*
Arbuckle Mountain	5400	c				
Battle Mountain Summit	4340	12/30	11	3.4	T	- -
Beech Creek Summit	4800	12/26	16	4.7	1.3	2.2*
Blue Mountain Spring	5900	12/27	34	10.5	5.8	6.9*
Blue Mountain Summit	5098	12/26	23	4.8	3.1	4.3
Derr	5670	c				
Dixie Springs	6650	c				
East Fork Canyon ^e	5700	c				
Gold Center	5340	c				
Indian Creek Butte ^e	6550	c				
Izee Summit	5293	12/26	20	5.5	2.6	4.6*
Lucky Strike	5050	c				
Marks Creek	4540	12/27	20	6.1	1.0	- -
Ochoco Meadows	5200	c				
Olive Lake	6000	12/27	42	11.6	7.8	8.4*
Schoolmarm	4775	12/29	13	3.9	2.4	2.8*
Snow Mountain	6300	c				
Starr Ridge	5150	12/26	16	4.5	2.0	2.8*
Tipton	5100	12/26	24	5.5	4.6	5.3*
Williams Ranch	4500	c				

(a) Assuming normal meteorological conditions. (b) 1943-57, 15 year period. (c) Not scheduled. (d) Corrected to natural flow. (e) Aerial snow depth gage; water content estimated. (f) Report delayed. (g) Not surveyed. (h) Nearest current data. (*) 1943-57 Adjusted average.

UPPER JOHN DAY WATERSHEDS




WATERSHED LOCATION



LEGEND

- Watershed Boundary
- - - Sub-watershed Boundary
- Sail Conservation District Bdry
- - - County Boundary
- ▲ Forecast Point
- Snow Course
- ▶ Sail Moisture Station
- † Aerial Snow Depth Gage



WATER SUPPLY OUTLOOK UPPER DESCHUTES, CROOKED WATERSHEDS OREGON

as of
JANUARY 1, 1962

U. S. D. A. SOIL CONSERVATION SERVICE - OREGON
AGRIC. EXPERIMENT STATION - OREGON STATE ENGINEER

GENERAL OUTLOOK

The outlook for irrigation water supplies in the Central Oregon area in 1962, at this early winter date, is very satisfactory, with mountain snow already accumulated in amounts substantially greater than average for January 1.

Although the moisture in the top 3 to 4 feet of the soil-mantle on Crooked River watershed is not quite up to last year's figure, the stored water supplies already surpass those on tap one year ago this date.

SNOW COVER

Water content of the mountain snow cover, as measured at Marks Creek Snow Course on the Crooked River watershed, is 6.1 inches or 6 times the 1.0 inch measured one year ago.

On the main Deschutes the snow surveys at 3 key courses revealed the present water content of the pack to be close to double the amount present exactly one year ago.

SOIL MOISTURE

Watershed soils in the Crooked area could absorb as much as 4 inches more water from the snowpack to bring them up to full capacity.

RESERVOIR STORAGE

Although the 6,300 acre feet now in storage in Ochoco reservoir is much below the average January 1st figure of 21,000 acre feet, it is well ahead of the 1,500 a.f. held in storage one year ago.

Prineville reservoir already has better than 96,000 acre feet stored for future use.

Storage in 3 main Deschutes reservoirs is close to average. Crescent Lake holds about 38,100 acre feet compared with 34,200 acre feet a year ago. Craine Prairie contains 34,500 acre feet against 29,700 a.f. last year. Wickiup already has 116,700 acre feet compared with 102,200 a.f. last year on January 1st.

STREAMFLOW

Fall and early winter precipitation has been favorable this season with flow of the Deschutes at Moody* recorded at 93 percent of the 1943-57 average since October 1st.

Early indications are this will be a satisfactory water supply for irrigation in 1962.

*Preliminary data furnished by U.S. Geological Survey, Portland, Oregon

WATER SUPPLY OUTLOOK expressed as "Poor", "Fair", "Average" or "Excellent"

STREAM or AREA	FLOW PERIOD	
	SPRING SEASON	LATE SEASON
Arnold Irrigation District	Forecasts begin in the February 1 report which will reach you about February 9, 1962.	
Bear Creek		
Beaver Creek		
Camp Creek		
Central Ore. Irrig. Dist.		
Crooked River		
Deschutes River		
Hay-Trout Creeks		
Lone Pine Irrig. Dist.		
Mill Creek		
North Unit Irrig. Dist.		
Ochoco Creek		
Sisters Irrigation Dist.		
Snow Creek Irrig. Dist.		
Squaw Creek Irrig. Dist.		
Swalley Ditch		
Tumalo Project		
Walker Basin Irrig. Dist.		

RESERVOIR STORAGE (1,000 Ac. Ft.)

RESERVOIR	USABLE CAPACITY	MEASURED (First of Month)		
		THIS YEAR	LAST YEAR	1943-57 AVERAGE
Crane Prairie	55.3	34.5	29.7	35.5
Crescent Lake	117.2	38.1	34.2	43.6
Ochoco	47.5	6.3	1.5	21.1
Prineville	153.0	96.5	- -	- -
Wickiup	182.0	116.7	102.2	102.0
Note: The U. S. Bureau of Reclamation indicates that dead storage in the amount of 5360 acre feet may be included in the current storage figure for Crescent Lake.				

STREAMFLOW FORECASTS^a(1,000 Ac. Ft.)

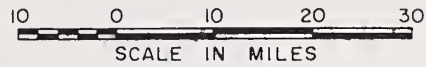
FORECAST POINT		FORECAST THIS YEAR	FORECAST PERIOD	1943-57 AVERAGE	THIS YEAR AS PERCENT OF AVERAGE ^b
NO.	NAME				
0535	Crane Prairie Reservoir total Inflow	c	April-Sept.	143	
0600	Crescent at Crescent Lake ^d	c	April-Sept.	31	
0795	Crooked near Post	c	April-Sept.	129	
0645	Deschutes at Benham Falls ^d	c	April-Sept.	602	
			April-July	404	
0500	Deschutes below Snow Creek	c	April-Sept.	74	
0630	Deschutes, Little near Lapine ^d	c	April-Sept.	113	
			April-July	100	
0848	Ochoco Reservoir net Inflow	c	April-Sept.	32	
0555	Odell near Crescent	c	April-Sept.	34	
0750	Squaw near Sisters	c	April-Sept.	55	
0730	Tumalo near Bend ^d	c	April-Sept.	55	

AVAILABLE SOIL MOISTURE

STATION		PROFILE (Inches)		SOIL MOISTURE (Inches)			
		DEPTH	AVAILABLE CAPACITY	DATE	THIS YEAR	LAST YEAR	2 YEARS AGO
NAME	ELEVATION						
Derr	5670	24	6.0	c			
Marks Creek	4540	36	8.3	12/27/61	3.8	4.3	5.6
Snow Mountain	6300	48	10.4	c			

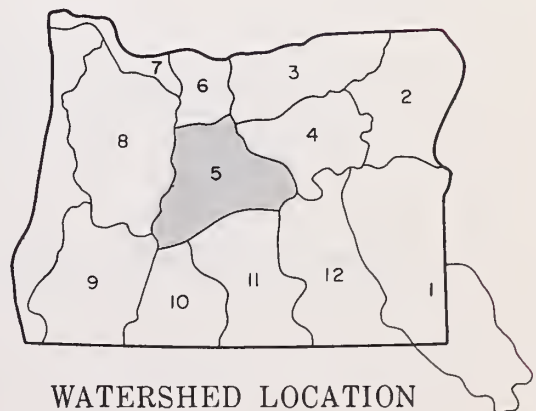
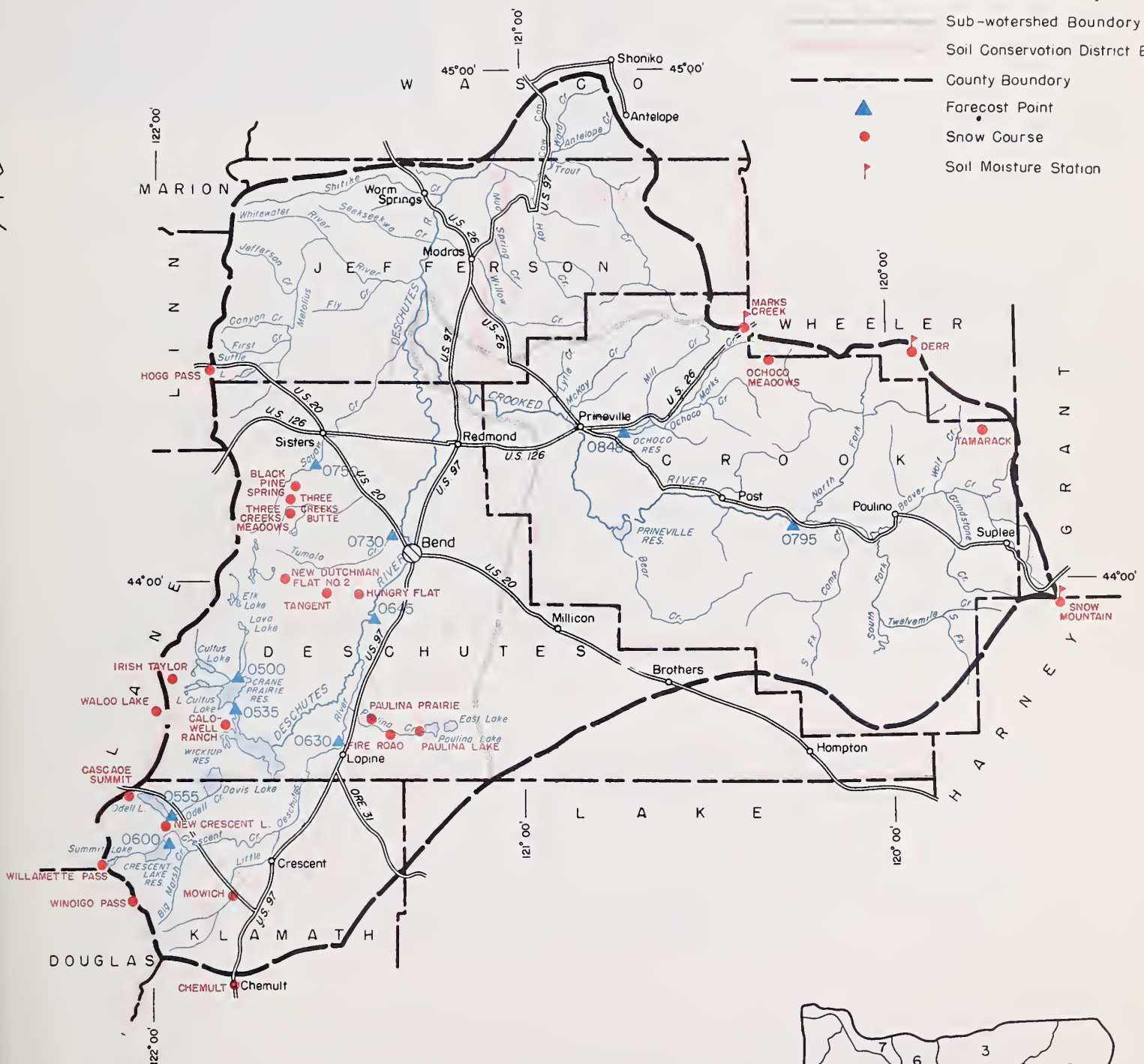
(a) Assuming normal meteorological conditions. (b) 1943-57, 15 year period. (c) Not scheduled. (d) Corrected to natural flow. (e) Aerial snow depth gage; water content estimated. (f) Report delayed. (g) Partly estimated. (*) 1943-57 Adjusted average.

UPPER DESCHUTES, CROOKED WATERSHEDS



LEGEND


- Watershed Boundary
- Sub-watershed Boundary
- Soil Conservation District Bdry.
- County Boundary
- ▲ Farecast Point
- Snow Course
- ▲ Soil Moisture Station



Upper Deschutes, Crooked Watersheds

SNOW

SNOW COURSE		CURRENT INFORMATION			PAST RECORD	
		DATE OF SURVEY	SNOW DEPTH (Inches)	WATER CONTENT (Inches)	WATER CONTENT (Inches)	
NAME	ELEVATION				LAST YEAR	1943-57 AVERAGE
Black Pine Spring	4600	c				
Caldwell Ranch	4400	c				
Cascade Summit	4880	12/29	51	18.7	8.7	14.9*
Chemult	4760	12/27	20	5.8	4.4	5.5*
Derr	5670	c				
Fire Road	5050	c				
Hogg Pass	4755	12/22	76	25.0	11.6	18.4
Hungry Flat	4400	c				
Irish-Taylor	5500	c				
Marks Creek	4540	12/27	20	6.1	1.0	- -
Mowich	4700	c				
New Crescent Lake	4800	c				
New Dutchman Flat No. 2	6400	c				
Ochoco Meadows	5200	c				
Paulina Lake	6330	c				
Paulina Prairie	4285	c				
Snow Mountain	6300	c				
Tamarack	4800	c				
Tangent	5400	c				
Three Creeks Butte	5200	c				
Three Creeks Meadows	5600	c				
Waldo Lake	5500	c				
Willamette Pass	5600	c				
Windigo Pass	5800	c				



WATER SUPPLY OUTLOOK HOOD, MILE CREEKS, LOWER DESCHUTES WATERSHEDS OREGON

as of
JANUARY 1, 1962

U. S. D. A. SOIL CONSERVATION SERVICE · OREGON
AGRIC. EXPERIMENT STATION · OREGON STATE ENGINEER

GENERAL OUTLOOK

The outlook for irrigation water supplies in the Hood River - Wasco County area in 1962, at this early winter date, is very satisfactory with mountain snow cover already surpassing average January 1st accumulations.

SNOW COVER

Water content of the mountain snow cover at Phlox Point and Still Creek Snow Courses, on the southwest slope of Mt. Hood, already exceeds the 15 year average (1943-57) figure for January 1st by about 15 percent.

Seven snow courses in this region have a snow cover already 188 percent of last year and still collecting snow.

SOIL MOISTURE

Above normal fall and early winter rains in Wasco and eastern Hood River counties have improved soil moisture conditions in the lower elevations in these areas. Soils in upper areas have not been "recharged" as much because recent heavy rains have been caught and held in the snowpack. At Phlox Point rain was observed to have penetrated 100 inches of snow forming a two inch layer of slush at the ground surface.

STREAMFLOW

Flow of Hood River* has been 94 percent of the 1943-57 average since October 1st. Heavy December rains brought the flow up to 114 percent for that month.

*Preliminary data furnished by U.S. Geological Survey, Portland, Oregon

WATER SUPPLY OUTLOOK

expressed as "Poor", "Fair"
"Average" or "Excellent"

STREAM or AREA	FLOW PERIOD	
	SPRING SEASON	LATE SEASON
Aldridge Ditch Badger Creek Dee Irrigation District East Fork Irrig. Dist. Farmers Irrig. Dist. Hood River Irrig. Dist. Juniper Flat Middle Fork Irrig. Dist. Mile Creeks Mill Creek Mount Hood Irrig. Dist. Rock-Gate-Threemile Crs. Tygh Creek White River	Forecasts begin in the February 1 report which will reach you about February 9, 1962.	

RESERVOIR STORAGE (1,000 Ac. Ft.)

RESERVOIR	USABLE CAPACITY	MEASURED (First of Month)		
		THIS YEAR	LAST YEAR	1943-57 AVERAGE
Clear Lake	--	3.0	--	--

STREAMFLOW FORECASTS^a(1,000 Ac. Ft.)

FORECAST POINT		FORECAST THIS YEAR	FORECAST PERIOD	1943-57 AVERAGE	THIS YEAR AS PERCENT OF AVERAGE ^b
NO.	NAME				
1210	Hood near Hood River ^d	c	April-Sept.	365	
			April-July	311	
1185	Hood, West Fork near Dee	c	April-Sept.	174	
			April-July	151	
1015	White below Tygh Valley	c	April-Sept.	178	
			April-July	161	

SNOW

SNOW COURSE		CURRENT INFORMATION			PAST RECORD	
		DATE OF SURVEY	SNOW DEPTH (Inches)	WATER CONTENT (Inches)	WATER CONTENT (Inches)	
NAME	ELEVATION				LAST YEAR	1943-57 AVERAGE
Brooks Meadows	4300	c				
Clear Lake	3500	12/29	13	5.3	2.0	--
Clear Lake Experimental	3500	12/29	21	6.8	4.3	--
Cooper Spur	3490	12/29	15	5.9	2.4	--
Greenpoint Reservoir	3400	c				
Knebal Springs	3850	c				
Parkdale	1770	12/29	0	0.0	0.2	--
Phlox Point	5600	12/28	83	35.3	21.5	29.8*
Red Hill	4400	c				
Still Creek	3700	12/28	34	12.4	5.8	11.8*
Tilly Jane	6000	c				
Ulrich Ranch Junction	3350	c				
Upper Valley	2530	12/29	8	3.3	0.6	--

(a) Assuming normal meteorological conditions. (b) 1943-57, 15 year period. (c) Not scheduled. (d) Corrected to natural flow. (e) Aerial snow depth gage; water content estimated. (f) Report delayed. (g) Partly estimated. (*) 1943-57 Adjusted average.

10 0 10 20
SCALE IN MILES



-
- A map of the San Joaquin River watershed divided into 12 numbered sub-watersheds. Watershed 6 is shaded gray. The watersheds are numbered 1 through 12, with 6 being the central, shaded area. Watershed 1 is on the far right, 2 is above it, 3 is above 6, 4 is to the right of 6, 5 is below 6, 7 is above 8, 8 is to the left of 6, 9 is below 8, 10 is below 5, 11 is to the right of 10, and 12 is to the right of 11.

WATER SUPPLY OUTLOOK LOWER COLUMBIA WATERSHEDS OREGON

as of
JANUARY 1, 1962



U. S. D. A. SOIL CONSERVATION SERVICE - OREGON
AGRIC. EXPERIMENT STATION - OREGON STATE ENGINEER

GENERAL OUTLOOK

The 1962 water supply outlook for the Columbia River near The Dalles is for slightly above normal spring and summer flow.

SNOW COVER

Snow courses measured in the U.S. portion of the Columbia Basin indicate a good snowpack in the northern part of the basin, falling off in the southern half on some tributaries such as the Bitterroot, Big Lost, Big Wood and Owyhee Rivers.

The headwaters of the Snake River, however, have a good snowpack for this time of the year.

SOIL MOISTURE

Soil moisture conditions in the northern portion of Columbia Basin are poorer than they have been for many years. Base flow figures which usually reflect soil moisture status also indicate dry conditions on most northern tributaries. Base flow on the Kootenai River, however, is close to normal.

The number of soil-moisture measurements made by means of electrodes in the soil beneath the snow has been increased significantly but records are short. However, experience indicates that soil moisture conditions in general are drier than last year for most tributaries in the Columbia Basin.

STREAMFLOW

Flow of the Columbia River near The Dalles* has been below normal and steadily declining since October 1st.

<u>Month</u>	<u>Percent of Normal Discharge (1943-57)</u>
October	91 adjusted for storage
November	80 " " "
December	73 " " "

*From preliminary data furnished by U.S. Geological Survey, Portland, Oregon

STREAMFLOW FORECASTS^a(1,000 Ac. Ft.)

FORECAST POINT		FORECAST THIS YEAR	FORECAST PERIOD	1943-57 AVERAGE	THIS YEAR AS PERCENT OF AVERAGE ^b
NO.	NAME				
1057	Columbia at The Dalles	c	April-Sept. April-June	106,100 72,000	

HISTORICAL DATA (Columbia River at The Dalles)

YEAR	STREAMFLOW ^c (1,000 A.F.)			PEAK ^e (1,000 c.f.s.)	DATE
	APR. - SEPT.	APR. - JUNE	MAY - JUNE		
1943	115,000	75,300	52,400	541	June 21
1944	61,900	39,200	32,100	326	June 19
1945	81,600	54,600	47,300	505	June 8
1946	108,100	75,400	59,600	581	May 30
1947	100,300	70,000	56,800	536	May '11
1948	130,500	94,600	81,900	999	May 31
1949	95,700	71,400	56,000	622	May 18
1950	120,400	74,700	61,200	744	June 25
1951	113,000	75,600	59,100	597	May 26
1952	107,700	77,500	57,300	557	May 28
1953	100,600	64,900	55,800	609	June 17
1954	119,500	70,500	59,300	561	May 23
1955	99,500	58,300	50,300	545	June 26
1956	131,400	96,900	75,800	815	June 3
1957	105,700	80,500	67,200	700	May 22
1943-57 Avg.	106,100	72,000	58,100	616	
1958	97,700	72,000	58,600	593	May 31
1959	112,500	71,900	58,900	555	June 23

LOWER COLUMBIA RIVER FLOOD STAGES (with 9.5' tide at Astoria)^f

VANCOUVER ^g GAGE (Weather Bu.)	FLOW AT THE DALLES (1,000 c.f.s.)	DRAINAGE DISTRICT PUMPHOUSE						
		SANDY	SAUVIE ISL.	SCAPPOOSE	DEER ISL.	RAINIER	BEAVER	WOODSON
		RIVER MILES						
		118.9	96.0	91.0	77.0	62.0	52.0	47.0
35 (1894)	1210	41.2	34.2	33.3	28.5	21.9	17.5	15.5
34	1160	40.5	33.5	32.5	27.7	21.2	17.0	15.0
33	1100	39.6	32.4	31.4	26.7	20.2	16.1	14.3
32	1050	38.9	31.5	30.5	25.7	19.5	15.4	13.7
31 (1948)	1000	38.0	30.7	29.5	25.1	18.8	14.7	13.0
30	940	36.6	29.5	28.5	24.3	18.1	14.0	12.4
29	890	35.5	28.5	27.7	23.7	17.5	13.4	11.8
28	840	34.3	27.5	26.7	22.8	17.0	13.0	11.4
27 (1956)	790	33.0	26.5	25.6	21.8	16.2	12.5	11.0
26 (1950)	750	32.1	25.5	24.6	20.9	15.5	12.2	10.7
25	700	30.7	24.2	23.2	19.7	14.6	11.7	10.3
24	660	29.7	23.0	22.2	19.0	14.1	11.4	10.2
23	630	29.0	22.3	21.4	18.4	13.6	11.2	10.0
22	590	28.1	21.4	20.3	17.2	13.0	10.9	9.7
21	560	27.2	20.7	19.5	16.4	12.6	10.6	9.6
20	530	26.2	19.8	18.6	15.5	12.1	10.2	9.4
19	510	25.5	19.2	18.0	15.0	11.8	10.0	9.3
18	480	24.4	18.3	17.2	14.3	11.4	9.8	9.1
17	450	23.4	17.4	16.4	13.7	11.0	9.6	8.9
16	430	22.4	16.5	15.5	13.0	10.5	9.3	-8.7

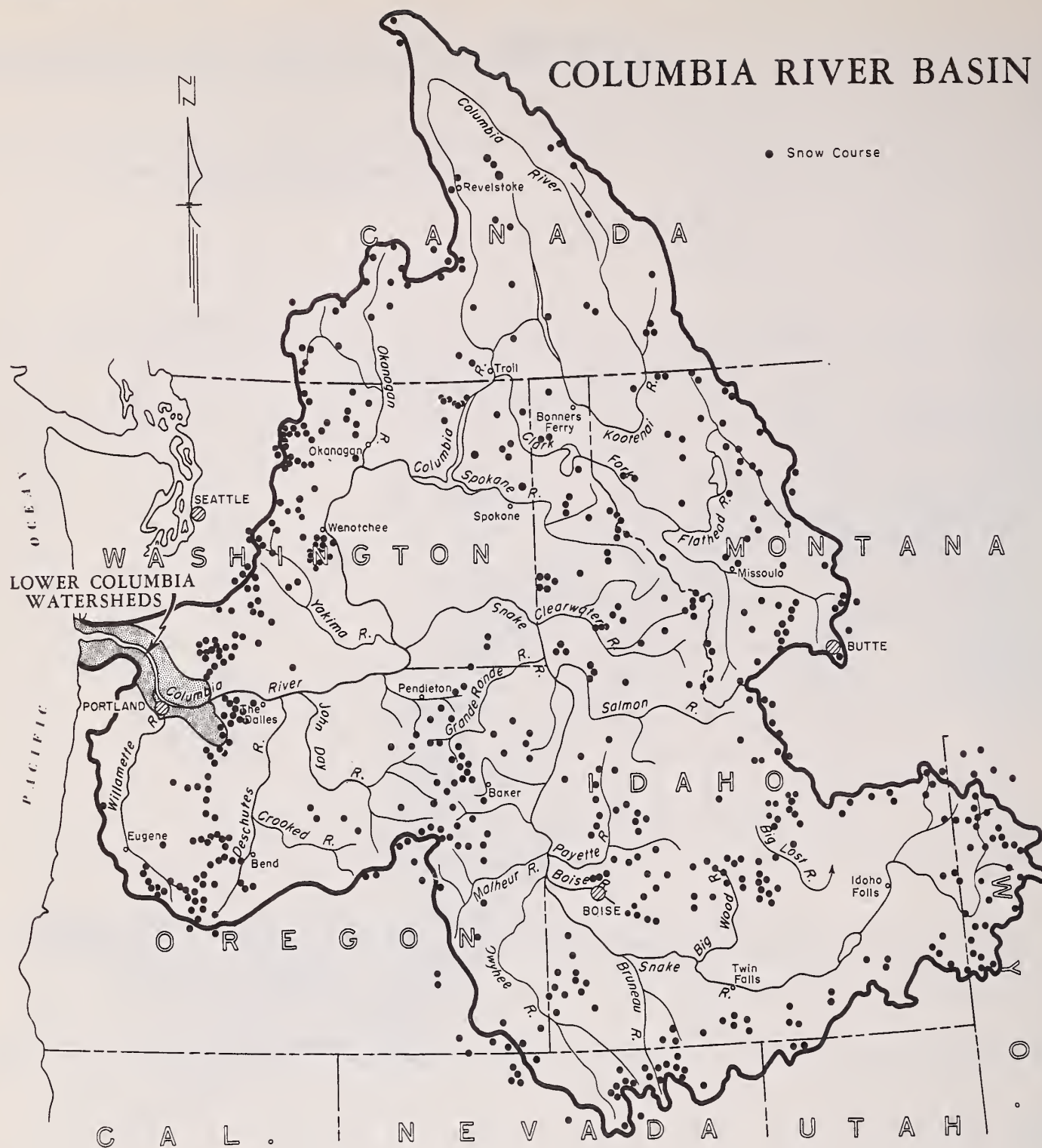
(a) Assuming normal meteorological conditions. (b) 1943-57, 15 year period. (c) Observed flow corrected for storage in F.D.R., Kootenai, Pend Oreille, Flathead, Hungry Horse, Lake Chelan, Coeur d'Alene and Grand Coulee Equalizer. (d) Not scheduled. (e) Observed peak. (f) Based on Corps of Engineers automatic water stage recorder data. (g) Vancouver Weather Bureau gage zero is 1.82' above M.S.L. All other readings are in feet above M.S.L.

LOWER COLUMBIA WATERSHEDS



LEGEND

- Watershed Boundary
- Sub-watershed Boundary
- Soil Conservation District Bdry.
- County Boundary
- 50 River Miles
- Snow Course



"The Conservation of Water begins with the Snow Survey"

WATER SUPPLY OUTLOOK WILLAMETTE WATERSHEDS OREGON

as of
JANUARY 1, 1962

U. S. D. A. SOIL CONSERVATION SERVICE - OREGON
AGRIC. EXPERIMENT STATION - OREGON STATE ENGINEER

GENERAL OUTLOOK

The outlook for irrigation water supplies in the Willamette Valley in 1962, at this early winter date, is very satisfactory with mountain snow cover already surpassing the average January 1st snow survey measurements.

SNOW COVER

Water content of the mountain snowpack, as measured at 32 mountain stations on Willamette River tributaries, is better than double (250 percent) the amount measured on January 1st one year ago. This year's surveys found the snow to be 120 percent of the 15 year average (1943-57)

Under average winter conditions there is usually 38 percent of the total winter's "snow crop" on the ground by January 1st. This year there is 47 percent of an average total already accounted for compared with only 27 percent one year ago.

SOIL MOISTURE

Precipitation has been sufficient to "recharge" the soil-mantle on lower and moderate elevations of the watersheds but came in the form of snow at high elevations, thus leaving some soils incompletely "recharged" at high elevations.

RESERVOIR STORAGE

Six large multi-purpose reservoirs on Willamette tributaries are at or near minimum flood pool level and will be filled according to the pre-arranged plan determined by the U. S. Corps of Army Engineers.

STREAMFLOW

Recent streamflow has generally followed the pattern of precipitation which has been above normal in the southern tributaries and slightly below normal in the northern area.

Flow of the Middle Fork of the Willamette* has been 82 percent of the 1943-57 average since October 1st but reached 105 percent of the average during December.

*Preliminary data furnished by U.S. Geological Survey, Portland, Oregon

WATER SUPPLY OUTLOOK

expressed as "Poor", "Fair"
"Average" or "Excellent"

STREAM or AREA	FLOW PERIOD	
	SPRING SEASON	LATE SEASON
Calapooya Clackamas McKenzie Molalla Santiam, North Santiam, South Willamette, Coast Fork Willamette, Middle Fork	Forecasts begin in the February 1 report which will reach you about February 9, 1962.	

RESERVOIR STORAGE (1,000 Ac. Ft.)

RESERVOIR	USABLE CAPACITY	MEASURED (First of Month)		
		THIS YEAR	LAST YEAR	1943-57 AVERAGE
Cottage Grove	30.8*	0.0	0.0	3.1
Detroit	299.9*	26.1	0.0	- -
Dorena	70.5*	0.1	0.2	5.3
Fern Ridge	94.2*	0.3	0.2	15.8
Hills Creek Res.	249.0*	56.0	- -	- -
Lookout Point	337.2*	31.3	3.1	- -
*Multiple purpose reservoir--space reserved primarily for flood runoff.				

STREAMFLOW FORECASTS^a(1,000 Ac. Ft.)

FORECAST POINT		FORECAST THIS YEAR	FORECAST PERIOD	1943-57 AVERAGE	THIS YEAR AS PERCENT OF AVERAGE ^c
NO.	NAME				
2080	Clackamas at Big Bottom	c	April-Sept.	184	
			April-July	150	
2100	Clackamas at Estacada	c	April-Sept.	879	
			April-July	763	
2095	Clackamas above Three Lynx	c	April-Sept.	674	
			April-July	578	
1590	McKenzie at McKenzie Bridge	c	April-Sept.	640	
			April-July	488	
1625	McKenzie near Vida	c	April-Sept.	1362	
			April-July	1120	
2090	Oak Grove Fork above Power Intake	c	April-Sept.	198	
			April-July	156	
1545	Row near Dorena	c	April-Sept.	114	
			April-July	109	
1830	Santiam, North at Mehama ^d	c	April-Sept.	968	
			April-July	866	
1875	Santiam, South at Waterloo	c	April-Sept.	652	
			April-July	616	
1480	Willamette, Mid. Fk. blw. N. Fk. nr. Oakridge	c	April-Sept.	909	
			April-July	804	
1910	Willamette at Salem ^d	c	April-Sept.	5461	
			April-July	4942	

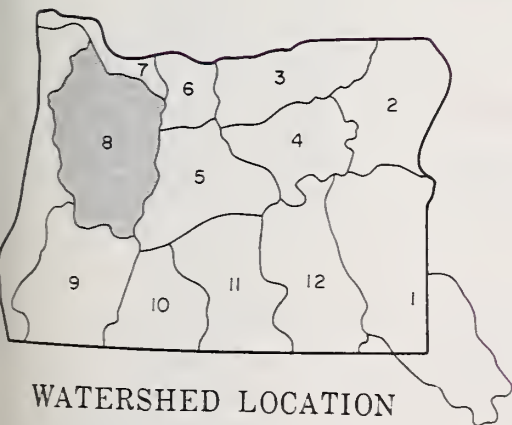
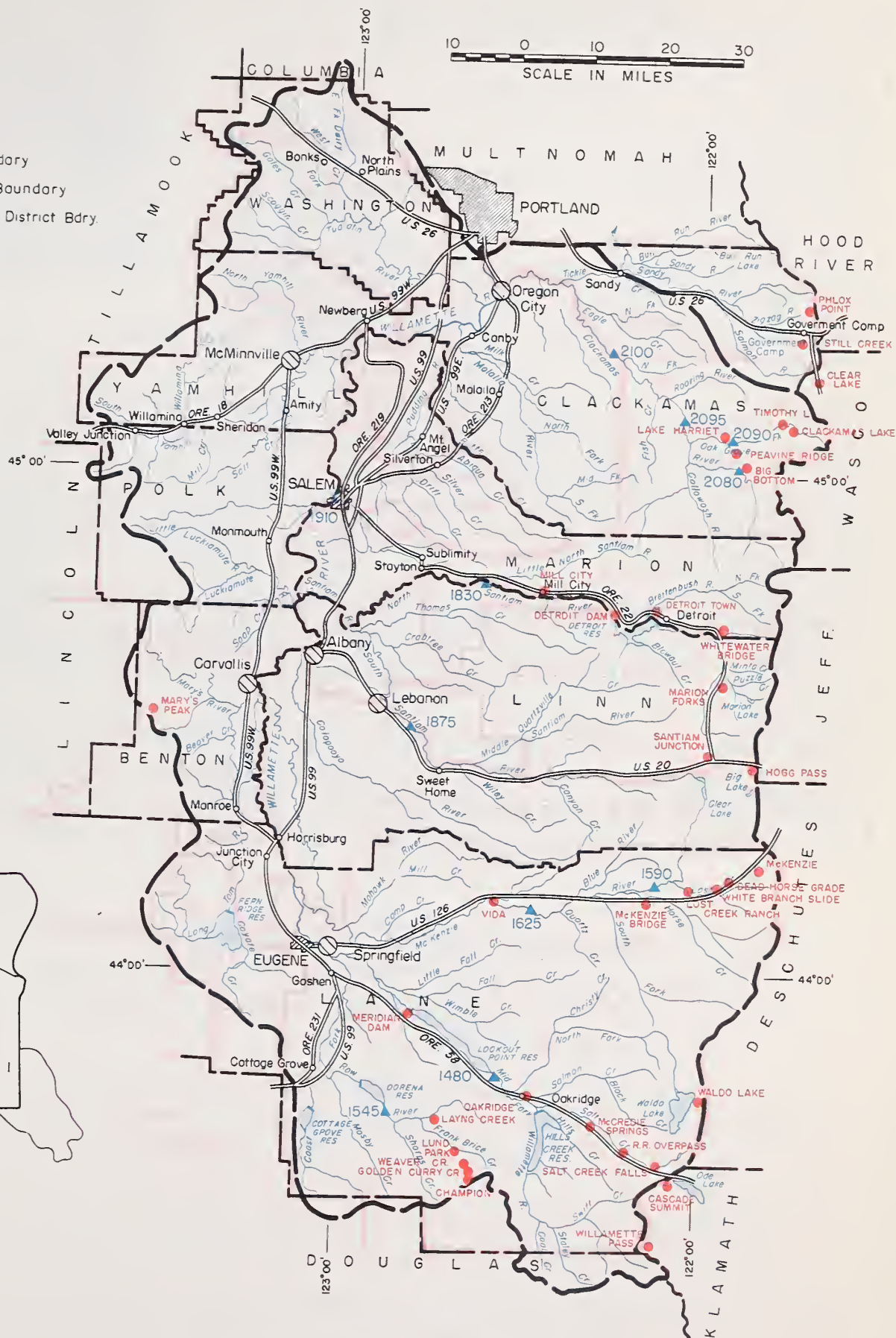
(a) Assuming normal meteorological conditions. (b) 1943-57, 15 year period. (c) Not scheduled. (d) Corrected to natural flow. (e) Aerial snow depth gage; water content estimated. (f) Report delayed.
(*) 1943-57 Adjusted average.

WILLAMETTE WATERSHEDS

LEGEND

- Watershed Boundary
- Sub-watershed Boundary
- Soil Conservation District Bdry.
- County Boundary
- ▲ Forecast Point
- Snow Course

10 0 10 20 30
SCALE IN MILES



Willamette Watersheds

SNOW

SNOW COURSE		CURRENT INFORMATION			PAST RECORD	
		DATE OF SURVEY	SNOW DEPTH (Inches)	WATER CONTENT (Inches)	WATER CONTENT (Inches)	
					LAST YEAR	1943-57 AVERAGE
NAME	ELEVATION					
Big Bottom	2118	12/30	T	T	0.0	2.6*
Cascade Summit	4880	12/29	51	18.7	8.7	14.9*
Champion	4500	12/29	31	12.4	3.3	10.5*
Clackamas Lake	3400	c				
Clear Lake	3500	12/29	13	5.3	2.0	- -
Clear Lake Experimental	3500	12/29	21	6.8	4.3	- -
Dead Horse Grade	3800	1/2	29	11.6	4.1	8.7*
Detroit Town	1610	12/22	0	0.0	0.0	0.3
Detroit Dam	1580	12/22	0	0.0	0.0	0.4
Golden Curry Creek	3136	12/29	0	0.0	0.0	4.3*
Hogg Pass	4755	12/22	76	25.0	11.6	18.4
Lake Harriet	2045	12/29	T	T	0.0	1.0
Layng Creek	1200	12/29	0	0.0	0.0	T
Lost Creek Ranch	1956	1/2	6	2.7	0.0	0.0
Lund Park	1740	12/29	0	0.0	0.0	1.4
Marion Forks	2730	12/22	22	7.6	1.8	5.7
Marys Peak	3620	c				
McCredie Springs	2120	12/29	0	0.0	0.0	0.5
McKenzie	4800	1/2	74	30.4	10.8	20.4*
McKenzie Bridge	1372	1/2	0	0.0	0.0	T
Meridian Dam	750	12/29	0	0.0	0.0	0.0
Mill City	826	12/22	0	0.0	0.0	0.0
Oakridge	1310	12/29	0	0.0	0.0	0.1
Peavine Ridge	3500	12/29	24	8.9	3.5	7.5
Phlox Point	5600	12/28	83	35.3	21.5	29.8*
Railroad Overpass	2750	12/29	0	0.0	0.0	1.4*
Salt Creek Falls	4000	12/29	26	10.0	T	7.1*
Santiam Junction	3990	12/22	45	15.9	5.5	10.7
Still Creek	3700	12/28	34	12.4	5.8	11.8*
Timothy Lake	3295	12/29	24	7.3	3.7	- -
Vida	800	1/2	0	0.0	0.0	0.0
Waldo Lake	5500	c				
Weaver Creek	2440	12/29	0	0.0	0.0	0.4
White Branch Slide	2800	1/2	9	3.8	T	3.4*
Whitewater Bridge	2175	12/22	9	2.9	T	3.2*
Willamette Pass	5600	c				

"The Conservation of Water begins with the Snow Survey"

WATER SUPPLY OUTLOOK ROGUE, UMPQUA, WATERSHEDS

OREGON

as of
JANUARY 1, 1962

U. S. D. A. SOIL CONSERVATION SERVICE · OREGON
AGRIC. EXPERIMENT STATION · OREGON STATE ENGINEER

GENERAL OUTLOOK

The outlook for irrigation water supplies in the Rogue-Umpqua watersheds in 1962, at this early winter date, is satisfactory with mountain snow cover already surpassing the average January 1st snow survey measurements at many stations. Stored water supplies are accumulating at near normal rates and the soil-mantle under the mountain snowpack is partly "recharged" by fall rains.

SNOW COVER

Water content of the snowpack, as measured at 10 key stations, is now 117 percent of the 1943-57 average for the January 1 date. At 20 snow stations the present snowpack is now 177 percent of the amount measured one year ago.

SOIL MOISTURE

Fall precipitation*, somewhat above normal at most stations, has adequately "recharged" most mountain watershed soils at moderate elevations. However, at higher elevations, the recent moisture fell as snow and did not help to "prime" the soils. In the high elevations there will be some snowmelt water lost to satisfy these soils.

RESERVOIR STORAGE

Stored water for the Medford and Rogue River Valley Irrigations Districts, held in Fourmile and Fish Lake reservoirs, is 60 percent of the average for this date and 137 percent of the amount stored last year on January 1st. The total water now in these two reservoirs is 7,400 a.f. compared with 5,400 a.f. one year ago.

The three reservoirs storing water for use by Talent Irrigation District, Emigrant, Hyatt and Howard Prairie, now hold about 43,000 acre feet of water, more than double the amount in storage one year ago on January 1st.

STREAMFLOW

Flow of the Rogue River at Raygold** has averaged 94 percent of the 1943-57 normal since October 1st. The December flow was 85 percent of the average.

Above average accumulation of snow is needed for the balance of the winter if the effects of three years of dry conditions are to be effectively erased.

* From River Forecast Center of U. S. Weather Bureau, Portland, Oregon

** Preliminary data furnished by U.S. Geological Survey, Portland, Oregon

WATER SUPPLY OUTLOOK

expressed as "Poor", "Fair",
"Average" or "Excellent"

STREAM or AREA	FLOW PERIOD	
	SPRING SEASON	LATE SEASON
Althouse Creek		
Applegate River, Big		
Applegate River, Little		
Ashland Creek		
Butte Creek, Little		
Butte Creek, Big		
Cow Creek		
Deer Creek		
Elk Creek		
Emigrant Cr. (above Res.)		
Evans Creek		
Gold Hill Irrigation Dist.		
Grants Pass Irrig. Dist.		
Grave Creek		
Illinois River, East Fork		
Illinois River, West Fork		
Jump-off-Joe Creek		
Neil Creek		
Red Blanket Creek		
Rogue River		
Sucker Creek		
Table Rock Irrig. Dist.		
Thompson Creek		
Wagner Creek		
Williams Creek		

Forecasts begin in
the February 1
report which will
reach you about
February 9, 1962.

RESERVOIR STORAGE (1,000 Ac. Ft.)

RESERVOIR	USABLE CAPACITY	MEASURED (First of Month)		
		THIS YEAR	LAST YEAR	1943-57 AVERAGE
Emigrant Gap	39.0	16.3	6.6	3.8
Fish Lake	7.8	4.0	3.0	4.6
Fourmile Lake	16.1	3.4	2.4	7.7
Howard Prairie	60.0	20.0	11.4	- -
Hyatt Prairie	16.1	6.6	1.3	5.4

STREAMFLOW FORECASTS^a(1,000 Ac. Ft.)

FORECAST POINT		FORECAST THIS YEAR	FORECAST PERIOD	1943-57 AVERAGE	THIS YEAR AS PERCENT OF AVERAGE ^b
NO.	NAME				
3620	Applegate near Copper	c	April-Sept.	131	
3145	Clearwater above Trap Creek ^d	c	April-Sept.	73	
5045	Fourmile Lake net Inflow ^d	c	April-Sept.	7.4	
5140	Hyatt Reservoir net Inflow ^d	c	April-Sept.	6.2	
3770	Illinois River at Kerby ^d	c	April-Sept.	196	
3425	Little Butte, N. Fk. at Fish Lake nr. Lake Cr. ^d	c	April-Sept.	16.9	
3415	Little Butte, S. Fk. near Lake Creek	c	April-July	42	
3280	Rogue above Prospect	c	April-Sept.	351	
			April-July	293	
3320	Rogue, South Fork near Prospect ^d	c	April-Sept.	83	
			April-July	71	
3350	Rogue below South Fork	c	April-Sept.	749	
			April-July	608	
3590	Rogue at Raygold near Central Point	c	April-Sept.	1004	
			April-July	842	
3615	Rogue at Grants Pass	c	April-Sept.	974	
3135	Umpqua, North below Lemolo Res. near Toketee Falls ^d	c	April-Sept.	186	

(a) Assuming normal meteorological conditions. (b) 1943-57, 15 year period. (c) Not scheduled. (d) Corrected to natural flow. (e) Aerial snow depth gage; water content estimated. (f) Report delayed. (g) Not Surveyed. (h) Construction. (i) 7 of 18 sampling points. (j) Partly estimated. (*) 1943-57 Adjusted average.

Rogue, Umpqua Watersheds

SNOW

SNOW COURSE		CURRENT INFORMATION			PAST RECORD	
		DATE OF SURVEY	SNOW DEPTH (Inches)	WATER CONTENT (Inches)	WATER CONTENT (Inches)	
NAME	ELEVATION				LAST YEAR	1943-57 AVERAGE
Althouse	4530	c				
Annie Spring	6018	12/27	62	21.7	16.5	19.7*
Beaver Dam Creek	5100	1/3	20	5.2	5.4	- -
Big Red Mountain	6500	c				
Billie Creek Divide	5300	12/29	36	12.0	9.1	11.4*
Champion	4500	12/29	31	12.4	3.3	10.5*
Cold Springs Camp	6100	c				
Deadwood Junction	4600	1/3	16	4.1	2.6	- -
Diamond-Crater Summit	5800	12/27	73	24.2	12.3	- -
Diamond Lake	5315	12/27	44	15.2	7.5	10.8
Eden Valley Summit	2390	g				
Fish Lake	4865	12/28	25	7.7	4.4	5.7*
Fourmile Lake	6000	12/28	44	16.2	12.6	- -
Grayback Peak	6000	c				
Hazel View	2500	c				
Hobart Lake	5010	g				
Howard Prairie	4500	1/3	17	4.4	3.2	- -
Hyatt Prairie Reservoir	4900	1/3	15	3.5	2.0	4.2*
Little Red Mountain	6500	c				
North Umpqua	4215	12/21	33	7.8	3.4	- -
Page Mountain	4045	c				
Park Headquarters	6450	12/27	91	31.6	21.3	24.2*
Red Butte #1	4560	12/26	22	8.2	1.3	- -
Red Butte #2	4000	12/26	1	0.3	T	- -
Red Butte #3	3500	12/26	T	T	- -	- -
Red Butte #4	3000	12/26	0	0.0	- -	- -
Red Butte #5	2500	12/26	0	0.0	- -	- -
Red Butte #6	2000	12/26	0	0.0	- -	- -
Rye Spring Spur	5000	12/28	20	7.0	1.4	- -
Seven Lakes #1	6800	c				
Seven Lakes #2	6200	c				
Silver Burn	3720	12/27	17	5.2	2.3	5.1
Siskiyou Summit	4630	12/29	11	3.2	0.0	3.4
South Fork Canal	3500	12/28	3	0.8	0.0	1.5*
Trap Creek	3800	12/21	20	6.7	2.8	- -
Wagner Butte	6900	c				
Whaleback	5140	c				
Windigo Pass	5800	c				

"The Conservation of Water begins with the Snow Survey"

WATER SUPPLY OUTLOOK KLAMATH WATERSHEDS OREGON

as of
JANUARY 1, 1962

U. S. D. A. SOIL CONSERVATION SERVICE - OREGON
AGRIC. EXPERIMENT STATION - OREGON STATE ENGINEER

GENERAL OUTLOOK

The outlook for irrigation water supplies in the Klamath Basin in 1962, at this early winter date, is dimmed by short stored water supplies in Gerber and Clear Lake reservoirs. This, in spite of a mountain snowpack which is slightly better than average.

SNOW COVER

Water content of the snowpack on the Lost River and Sprague River watersheds is 109 percent of the 15 year average (1943-57) and is 224 percent of last year at this date.

Similarly, the snow on the Williamson River watershed is 111 percent of average and 150 percent of last year on January 1st.

SOIL MOISTURE

This good snow cover lies on a watershed soil-mantle which was fairly adequately recharged by excellent fall rains at low and moderate elevations. However, this rain came as snow at higher elevations and there the soils are not so well primed.

RESERVOIR STORAGE

On the head of Lost River, storage is at record-low for this date. Gerber reservoir holds only 1,600 acre feet compared with 3,400 a year ago and the 15 year average of 33,800 acre feet. Clear Lake now holds 54,100 acre feet compared with 109,000 acre feet a year ago and the average storage of 195,000 a.f. These critically low supplies may seriously affect the 1962 irrigation operations in eastern Klamath County.

Storage in Upper Klamath Lake is now 269,700 acre feet compared with 302,700 a year ago and with the average of 313,000 acre feet. This is a fairly good storage supply.

STREAMFLOW

Inflow into Upper Klamath Lake* has been 99 percent of average since October 1st. December flow was 91 percent of the average.

*Preliminary data from Pacific Power & Light Co., Medford, Oregon

WATER SUPPLY OUTLOOK expressed as "Poor", "Fair", "Average" or "Excellent"

STREAM or AREA	FLOW PERIOD	
	SPRING SEASON	LATE SEASON
Ft. Klamath Valley Lost River (Clear Lake) Lost River (Gerber) Lost River (Willow Res.) Sprague River Upper Klamath Lake Williamson River	Forecasts begin in the February 1 report which will reach you about February 9, 1962.	

RESERVOIR STORAGE (1,000 Ac. Ft.)

RESERVOIR	USABLE CAPACITY	MEASURED (First of Month)		
		THIS YEAR	LAST YEAR	1943-57 AVERAGE
Clear Lake	440.2	54.1	108.9	195.3
Gerber	94.0	1.6	3.4	33.8
Upper Klamath Lake	584.0	269.7	302.7	313.2

STREAMFLOW FORECASTS^a(1,000 Ac. Ft.)

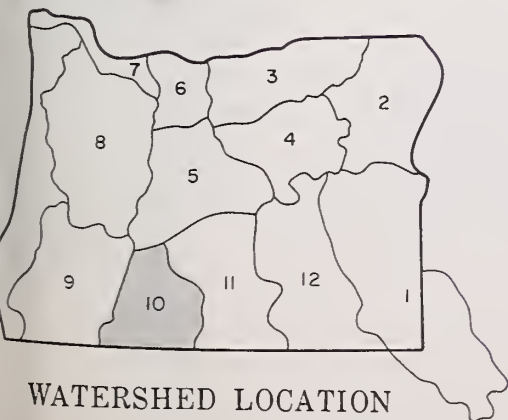
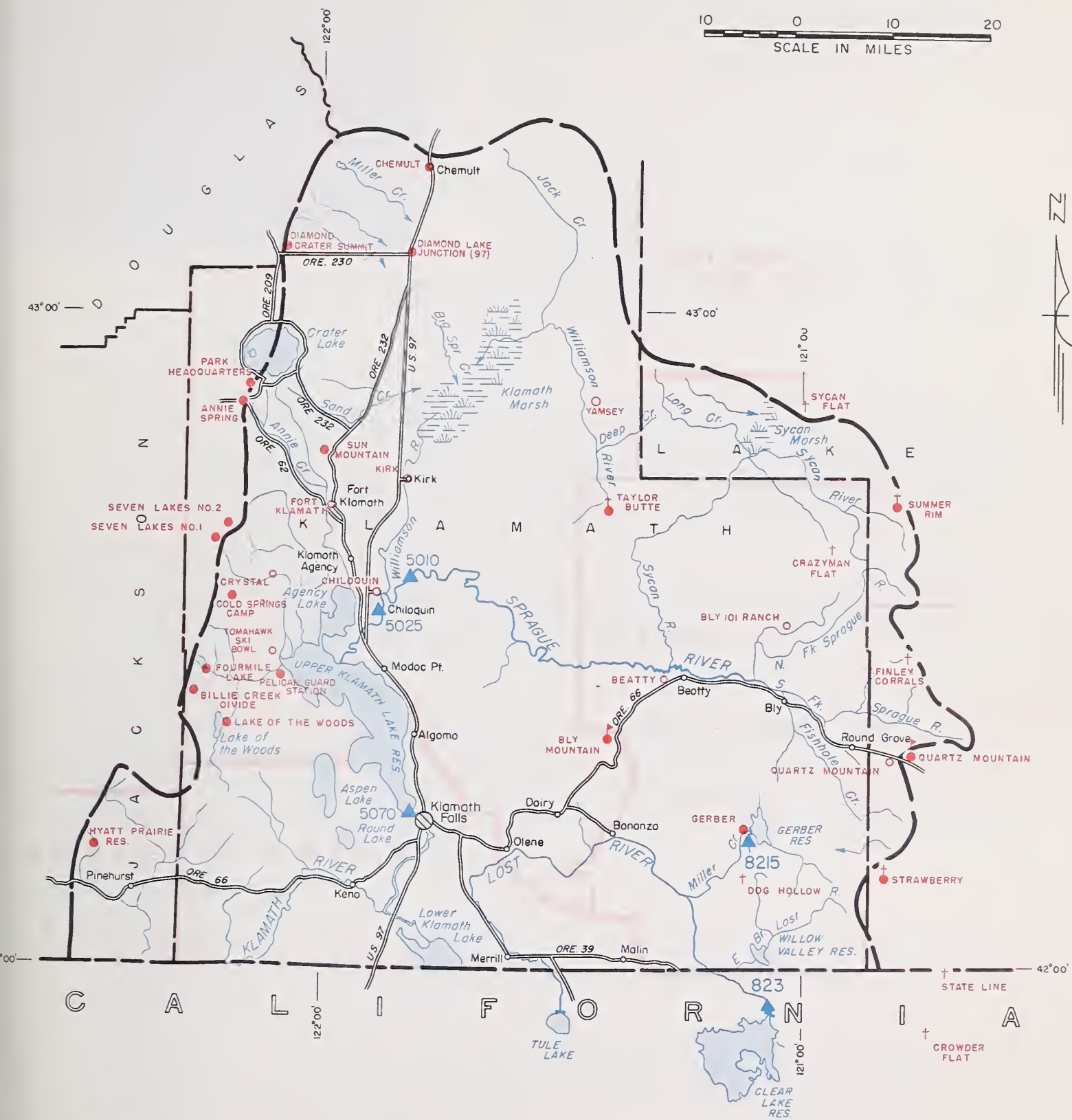
FORECAST POINT		FORECAST THIS YEAR	FORECAST PERIOD	1943-57 AVERAGE	THIS YEAR AS PERCENT OF AVERAGE ^c
NO.	NAME				
923	Clear Lake Reservoir Inflow ^g	c	April-Sept.	50	
8215	Gerber Reservoir Inflow ^g	c	April-Sept.	25	
5010	Sprague near Chiloquin	c	April-Sept.	296	
5070	Upper Klamath Lake net Inflow ^g	c	April-Sept.	632	
			April-July	518	
5025	Williamson below Sprague River ^d	c	April-Sept.	486	
			April-July	413	

SNOW

SNOW COURSE		CURRENT INFORMATION			PAST RECORD	
		DATE OF SURVEY	SNOW DEPTH (Inches)	WATER CONTENT (Inches)	WATER CONTENT (Inches)	
NAME	ELEVATION				LAST YEAR	1943-57 AVERAGE
Annie Spring	6018	12/27	62	21.7	16.5	19.7*
Beatty (PP&L)	4300	1/1	0	0.0	0.0	0.2
Billie Creek Divide	5300	12/29	36	12.0	9.1	11.4*
Bly Mountain	5090	12/27	19	5.2	3.0	- -
Bly 101 Ranch (PP&L)	4800	12/31	2	0.3	0.0	0.8
Chemult	4760	12/27	20	5.8	4.4	5.5*
Chiloquin (PP&L)	4187	12/29	5	1.6	0.0	0.9
Cold Springs Camp	6100	c				
Crazyman Flat ^e	6100	c				
Crowder Flat ^e	5200	c				
Crystal (PP&L)	4200	12/31	16	6.2	2.4	4.5
Diamond-Crater Summit	5800	12/27	73	24.2	12.3	- -
Diamond Lake Junction (97)	4600	12/27	12	2.7	2.4	- -
Dog Hollow ^e	4900	c				
Finley Corrals ^e	6000	c				
Fort Klamath (PP&L)	4150	12/31	5	1.8	- -	1.4
Gerber	4850	12/29	4	2.0	T	5.6
Hyatt Prairie Reservoir	4900	1/3	15	3.5	2.0	4.2*
Kirk (PP&L)	4533	12/31	12	3.1	2.0	3.6
Lake of the Woods	4960	12/30	22	6.6	5.6	5.3*
Park Headquarters	6450	12/27	91	31.6	21.3	24.2*
Pelican Guard Station	4150	12/29	7	2.4	1.2	- -
Quartz Mountain	5320	12/27	14	4.0	2.0	3.4*
Quartz Mountain (PP&L)	5504	12/27	17	4.6	2.4	3.7
Seven Lakes #1	6800	c				
Seven Lakes #2	6200	c				
State Line ^e	5750	c				
Strawberry	5600	c				
Summer Rim	7200	c				
Sun Mountain	5350	12/28	41	12.0	8.9	12.0
Sycan Flat ^e	5500	c				
Taylor Butte	5100	12/26	15	4.1	2.8	- -
Tomahawk Ski Bowl (PP&L)	4200	1/1	5	0.9	0.0	2.2
Yamsey (PP&L)	4600	12/28	12	4.1	- -	1.6

(a) Assuming normal meteorological conditions. (b) 1943-57, 15 year period. (c) Not scheduled. (d) Corrected to natural flow. (e) Aerial snow depth gage; water content estimated. (f) Report delayed. (g) From COPCO or USBR records of inflow. (h) Flashboards increase capacity to 513.0 (i) Water content partly estimated. (*) 1943-57 Adjusted average.

KLAMATH WATERSHEDS



LEGEND

- Watershed Boundary
- Sub-watershed Boundary
- Soil Conservation District Bdry
- County Boundary
- ▲ Forecast Point
- Snow Course
- † Aerial Snow Depth Gage
- COPCO Snow Station
- ▶ Soil Moisture Station

WATER SUPPLY OUTLOOK LAKE COUNTY, GOOSE LAKE WATERSHEDS OREGON

as of
JANUARY 1, 1962



U. S. D. A. SOIL CONSERVATION SERVICE - OREGON
AGRIC. EXPERIMENT STATION - OREGON STATE ENGINEER

GENERAL OUTLOOK

The outlook for irrigation water supplies in Lake County in 1962, at this early winter date, is seriously dimmed by critically short stored water supplies and by partially recharged soils under the snowpack. This, in spite of a good mountain snowpack which measures better than average for January 1st.

SNOW COVER

Water content of the mountain snowpack is now 121 percent of the 15 year average (1943-57) and 170 percent of the snow one year ago.

SOIL MOISTURE

Unfortunately, this good snow cover lies on a watershed soil-mantle which is still not adequately "recharged" by the fall rains which have been slightly better than normal. This is especially true at higher elevations where the rain came as snow. These soils may possibly take as much as 5 to 9 inches of water from the snowpack to bring them up to capacity.

RESERVOIR STORAGE

Drews reservoir, with only 795 acre feet of water in storage, is at an all-time low. Last year at this date it held 7,500 acre feet whereas the average storage on January 1 (1943-57) is 34,800 a.f.

Similarly, Cottonwood now holds only 100 acre feet compared with about 500 a.f. on January 1 a year ago. These extremely short supplies will likely hurt 1962 irrigation operations in Lake County.

STREAMFLOW

Rains have not yet overcome the critically dry conditions that have prevailed in Lake County for the past three years. Streams are producing only minimum flows at best and will require a continuation of heavier than usual winter storms to provide even a fair irrigation season.

WATER SUPPLY OUTLOOK

expressed as "Poor", "Fair",
"Average" or "Excellent"

STREAM or AREA	FLOW PERIOD	
	SPRING SEASON	LATE SEASON
Chewaucan River Crooked Creek Deep Creek Dry Creek East Side Goose Lake Guano Lake Honey Creek Lakeview Water Users Assn. Rock Creek (Hart Mtn.) Silver - Buck Creeks Summer Lake Thomas Creek Twentymile Creek Warner Lakes	Forecasts begin in the February 1 report which will reach you about February 9, 1962.	

RESERVOIR STORAGE (1,000 Ac. Ft.)

RESERVOIR	USABLE CAPACITY	MEASURED (First of Month)		
		THIS YEAR	LAST YEAR	1943-57 AVERAGE
Cottonwood Drew	4.1 63.0	0.1 0.8	0.5 7.5	0.2 34.8

STREAMFLOW FORECASTS^a(1,000 Ac. Ft.)

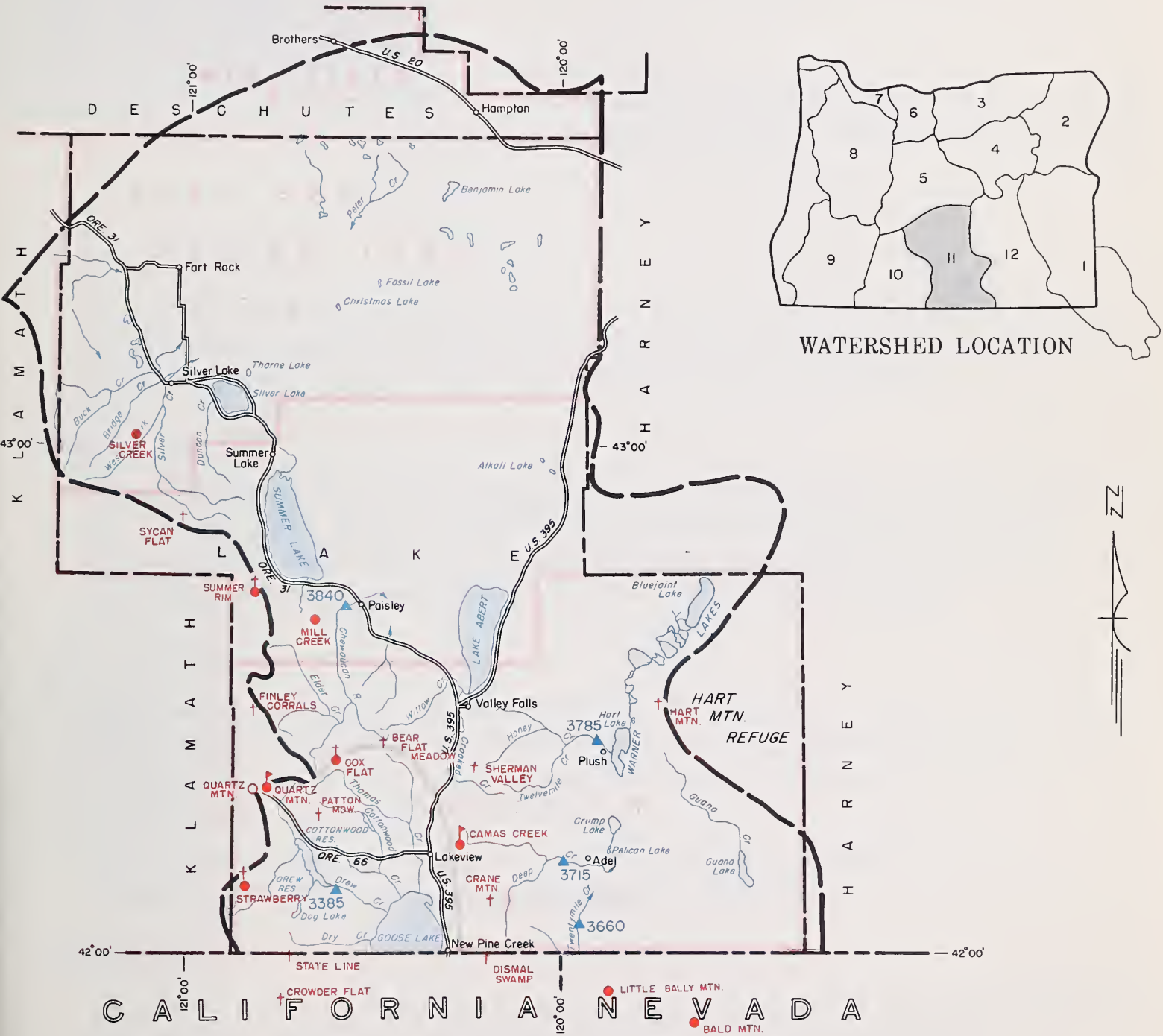
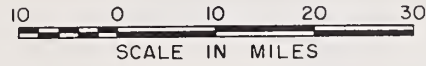
FORECAST POINT		FORECAST THIS YEAR	FORECAST PERIOD	1943-57 AVERAGE	THIS YEAR AS PERCENT OF AVERAGE ^b
NO.	NAME				
3840	Chewaucan near Paisley	c	April-June	82	
3715	Deep above Adel	c	April-June	71	
3385	Drew Reservoir net Inflow	c	April-July	34	
3785	Honey near Plush	c	April-June	16.3	
3660	Twentymile near Adel	c	April-June	20	

SNOW

SNOW COURSE		CURRENT INFORMATION			PAST RECORD	
		DATE OF SURVEY	SNOW DEPTH (Inches)	WATER CONTENT (Inches)	WATER CONTENT (Inches)	
NAME	ELEVATION				LAST YEAR	1943-57 AVERAGE
Bald Mountain (Nev.)	6720	c				
Bear Flat Meadow ^e	5900	c				
Camas Creek	5720	12/28	22	7.0	4.8	--
Cox Flat ^e	5750	c				
Crane Mountain ^e	6020	c				
Crowder Flat ^e	5200	c				
Dismal Swamp ^e (Calif.)	7000	c				
Finley Corrals ^e	6000	c				
Hart Mountain ^e	6350	c				
Little Bally Mtn. ^e	6600	c				
Mill Creek	6200	c				
Quartz Mountain (PP&L)	5504	12/27	17	4.6	2.4	3.7
Quartz Mountain	5320	12/27	14	4.0	2.0	3.4*
Sherman Valley ^e	6600	c				
Silver Creek	4900	12/26	12	2.9	1.7	--
State Line ^e	5750	c				
Strawberry	5600	c				
Summer Rim	7200	c				
Sycan Flat ^e	5500	c				

(a) Assuming normal meteorological conditions. (b) 1943-57, 15 year period. (c) Not scheduled. (d) Corrected to natural flow. (e) Aerial snow depth gage; water content estimated. (f) Report delayed.
(*) 1943-57 Adjusted average.

LAKE COUNTY, GOOSE LAKE WATERSHEDS



LEGEND

- Watershed Boundary
- Sub-watershed Boundary
- Soil Conservation District Bdry
- County Boundary
- ▲ Forecast Point
- Snow Course
- † Aerial Snow Depth Gage
- COPCO Snow Station
- ▶ Soil Moisture Station

WATER SUPPLY OUTLOOK HARNEY BASIN WATERSHEDS OREGON

as of
JANUARY 1, 1962

U. S. D. A. SOIL CONSERVATION SERVICE - OREGON
AGRIC. EXPERIMENT STATION - OREGON STATE ENGINEER

GENERAL OUTLOOK

The outlook for irrigation water supplies in Harney County in 1962, at this early winter date, is seriously dimmed by the relatively dry condition of the soil-mantle under the snow. The snow itself is better than average for this date.

SNOW COVER

Water content of the mountain snowpack in the north half of the county is about 121 percent of the 15 year average (1943-57) and double the amount measured one year ago. There are no surveys for the southern half of the county at this date, but there are indications that snow there is also above average.

SOIL MOISTURE

Unfortunately, this good snow cover lies on a watershed soil-mantle which is still not adequately "recharged" by the fall rains which have been about normal. This is especially true at the higher elevations where much of this rain came as snow and therefore did not get into the soils.

These high mountain soils may very possibly "rob" the snowpack of as much as 9 inches of water before the soils are recharged to capacity.

STREAMFLOW

Streamflow in Harney Basin has not yet recovered from the effects of three years of near drought conditions. Streams are flowing only in minimum amounts.

The flow from melting snow next spring will be reduced substantially unless moisture in the upper watershed soils raise to near capacity between now and the spring thaw.

Report prepared by
W. T. FROST AND BOB L. WHALEY
U. S. DEPARTMENT OF AGRICULTURE - SOIL CONSERVATION SERVICE
209 S.W. FIFTH AVENUE - PORTLAND 4, OREGON

WATER SUPPLY OUTLOOK expressed as "Poor", "Fair", "Average" or "Excellent"

STREAM or AREA	FLOW PERIOD	
	SPRING SEASON	LATE SEASON
Catlow Valley Cow Creek Donner und Blitzen River Mill-Coffeepot Creeks Rattlesnake Creek Silver Creek Silvies River Soldier-Prather Creek Trout Creek Whitehorse Creek	Forecasts begin in the February 1 report which will reach you about February 9, 1962.	

RESERVOIR STORAGE (1,000 Ac. Ft.)

RESERVOIR	USABLE CAPACITY	MEASURED (First of Month)		
		THIS YEAR	LAST YEAR	1943-57 AVERAGE

STREAMFLOW FORECASTS^a(1,000 Ac. Ft.)

FORECAST POINT		FORECAST THIS YEAR	FORECAST PERIOD	1943-57 AVERAGE	THIS YEAR AS PERCENT OF AVERAGE ^b
NO.	NAME				
3960	Donner und Blitzen near Frenchglen	c	April-Sept.	67	
4030	Silver near Riley	c	April-July	26	
3935	Silvies near Burns	c	April-Sept.	107	
4065	Trout near Denio	c	April-Sept.	9.2	

AVAILABLE SOIL MOISTURE

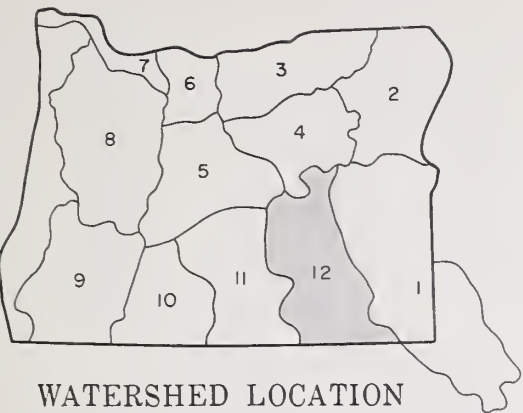
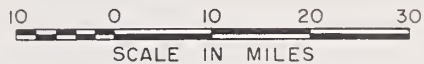
STATION		PROFILE (Inches)		SOIL MOISTURE (Inches)			
		DEPTH	AVAILABLE CAPACITY	DATE	THIS YEAR	LAST YEAR	2 YEARS AGO
NAME	ELEVATION						
Blue Mountain Springs	5900	42	12.0	12/27/61	2.6 ^j	1.3 ^j	- -
Fish Creek	7600	48	9.5	10/11/61	1.6 ^j	- -	- -
Folly Farm	4450	36	8.3	12/21/61	4.0 ^h	5.5 ^h	5.3
Silvies	6900	48	10.3	10/11/61	4.2 ^j	- -	- -
Snow Mountain	6300	48	10.4	i			
Starr Ridge	5150	36	6.1	12/26/61	2.2	3.3 ^h	4.9
Stinking Water	4800	48	11.7	12/21/61	10.4 ^h	11.0 ^h	10.6 ^h
Willow-Bald	5000	24	4.3	12/22/61	1.0	1.5	1.0

SNOW

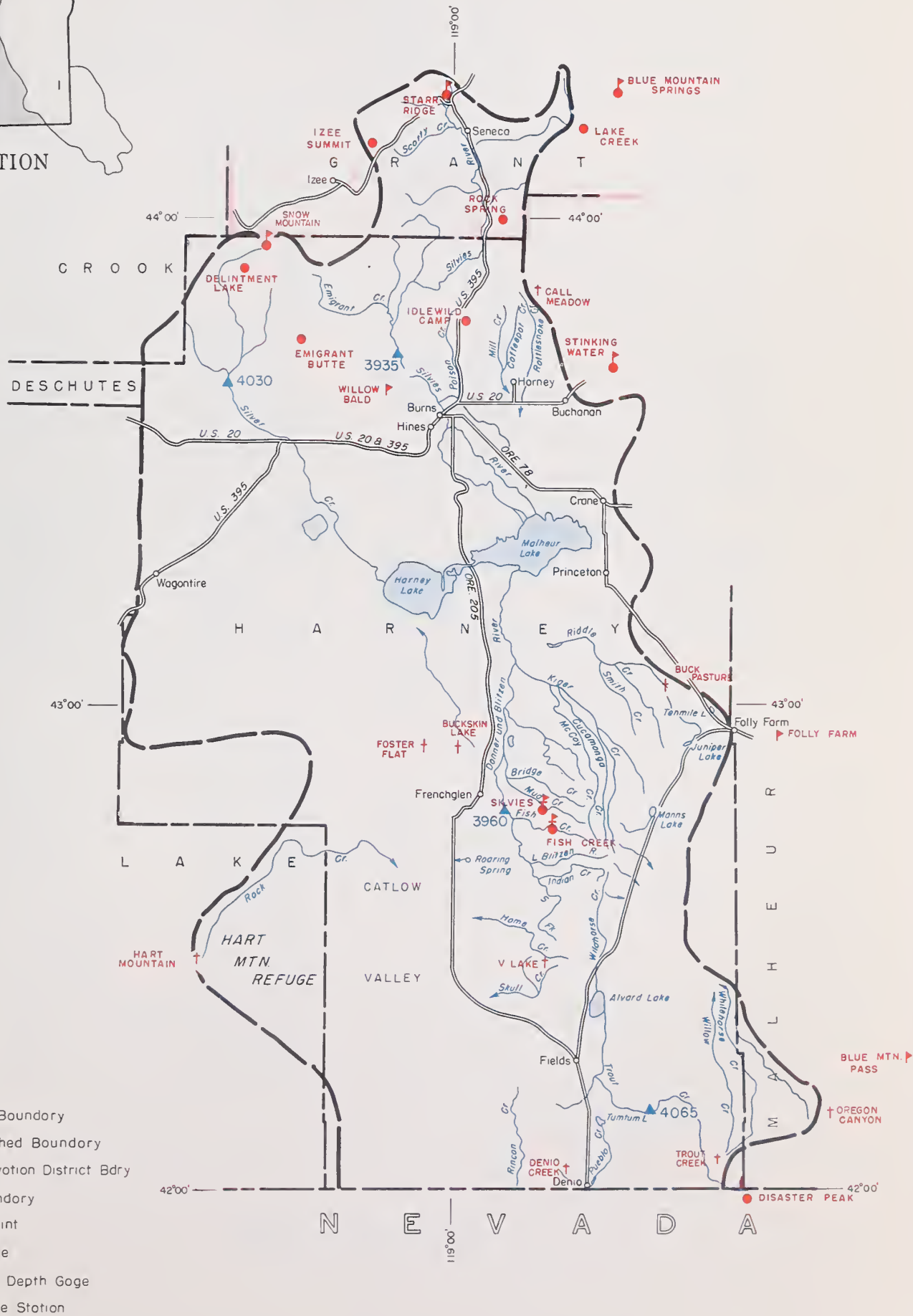
SNOW COURSE		CURRENT INFORMATION			PAST RECORD	
		DATE OF SURVEY	SNOW DEPTH (Inches)	WATER CONTENT (Inches)	WATER CONTENT (Inches)	
NAME	ELEVATION				LAST YEAR	1943-57 AVERAGE
Blue Mountain Spring	5900	12/27	34	10.5	5.8	6.9*
Buck Pasture ^e	5700	c				
Call Meadows ^e	5340	c				
Delintment Lake	5600	c				
Denio Creek ^e	6000	c				
Disaster Peak	6500	c				
Emigrant Butte	5000	c				
Fish Creek	7900	c				
Hart Mountain ^e	6350	c				
Idlewild Camp	5200	12/27	16	3.5	1.6	2.6*
Izee Summit	5293	12/26	20	5.5	2.6	4.6*
Lake Creek	5120	c				
Oregon Canyon ^e	6950	c				
Rock Spring	5100	12/27	13	2.3	1.0	2.7*
Silvies	6900	c				
Snow Mountain	6300	c				
Starr Ridge	5150	12/26	16	4.5	2.0	2.8*
Stinking Water	4800	1/1	T	T	T	2.1*
Trout Creek ^e	7800	c				
"V" Lake ^e	6600	c				

(a) Assuming normal meteorological conditions. (b) 1943-57, 15 year period. (c) Not scheduled. (d) Corrected to natural flow. (e) Aerial snow depth gage; water content estimated. (f) Report delayed. (g) Not surveyed. (h) Partly estimated. (i) No Fall measurement. (j) Nearest current data. (*) 1943-57 Adjusted average.









HARNEY BASIN WATERSHEDS



WATERSHED LOCATION



LEGEND

-  Watershed Boundary
-  Sub-watershed Boundary
-  Soil Conservation District Bdry
-  County Boundary
-  Forecast Point
-  Snow Course
-  Aerial Snow Depth Gage
-  Soil Moisture Station

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7-5-19101-0

The Following Organizations Cooperate in the Oregon Snow Survey Work

STATE

- Idaho Cooperative Snow Surveys
- Nevada Cooperative Snow Surveys
- Oregon Agricultural Experiment Station
- Oregon State Engineer and Corps of State Watermasters
- Oregon State Highway Engineers
- Soil Conservation Districts of Oregon

COUNTY

- Douglas County Water Resources Survey

FEDERAL

- Department of Agriculture
 - Cooperative Extension Service
 - Forest Service
 - Soil Conservation Service
- Department of Commerce
 - Weather Bureau
- Department of the Interior
 - Bonneville Power Administration
 - Bureau of Land Management
 - Bureau of Reclamation
 - Fish and Wildlife Service
 - Geological Survey
 - National Park Service
- Department of National Defense
 - Corps of Army Engineers

PUBLIC UTILITIES

- California-Pacific Utilities Company
- Pacific Power and Light Company
- Portland General Electric Company
- The California Oregon Power Company

MUNICIPALITIES

- City of Baker
- City of La Grande
- City of The Dalles
- City of Walla Walla

IRRIGATION DISTRICTS

- Arnold Irrigation District
- Associated Ditch Companies
- Burnt River Irrigation District
- Central Oregon Irrigation District
- East Fork Irrigation District
- Grants Pass Irrigation District
- Jordan Valley Irrigation District
- Lakeview Water Users, Incorporated
- Medford Irrigation District
- North Board of Control - Owyhee Project
- North Unit Irrigation District
- Ochoco Irrigation District
- Rogue River Valley Irrigation District
- South Board of Control - Owyhee Project
- Squaw Creek Irrigation District
- Talent Irrigation District
- Tumalo Project
- Vale-Oregon Irrigation District
- Warm Springs Irrigation District

PRIVATE ORGANIZATIONS

- Amalgamated Sugar Company
- The Crag Rats, Hood River, Oregon

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SOIL CONSERVATION SERVICE
ROSS BLDG., 209 S.W. 5TH AVE.
PORTLAND 4, OREGON

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